University of Groningen

Towards effective interventions for transgender people and their clients to prevent HIV infection and transmission

Prabawanti, Ciptasari

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2015

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):
Prabawanti, C. (2015). *Towards effective interventions for transgender people and their clients to prevent HIV infection and transmission: A study of the psychological determinants, sexual behavior s, and socio-demographic characteristics related to condom use and health care use*. University of Groningen.

Copyright
Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment.

Take-down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): http://www.rug.nl/research/portal. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Download date: 28-11-2021

Towards Effective Interventions for Transgender People and their Clients to Prevent HIV Infection and Transmission:

A study of the Psychological Determinants, Sexual Behaviors, and Socio-demographic Characteristics related to Condom Use and Health Care Use

Ciptasari Prabawanti

Towards Effective Interventions for Transgender People and their Clients to Prevent HIV Infection and Transmission:

A Study of the Psychological Determinants, Sexual Behaviors, and Socio-demographic Characteristics related to Condom Use and Health Care Use

Ciptasari Prabawanti

Cover design by Arifin Fitrianto
Layout by Arifin Fitrianto
Printed by Digital Master Printing

ISBN: 978-90-367-8377-4 (paperback version)
ISBN: 978-90-367-8376-7 (electronic version)

© 2015 Ciptasari Prabawanti. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior permission in writing from the proprietor.

university of groningen

Towards effective interventions for Transgender people and their Clients to prevent HIV infection and transmission

A study of the Psychological determinants, Sexual behaviors, and Socio-demographic characteristics related to condom use and health care use

PhD thesis

to obtain the degree of PhD at the
University of Groningen
on the authority of the
Rector Magnificus Prof. E. Sterken
and in accordance with
the decision by the College of Deans.

This thesis will be defended in public on

Monday 21 December 2015 at 16.15 hours

by

Ciptasari Prabawanti

born on 3 April 1969
in Yogyakarta, Indonesia

Supervisors
Prof. A. Dijkstra
Prof. A.P. Buunk

Assessment Committee
Prof. J. Wit
Prof. H. Hospers
Prof. T.T. Postmes

Dedicated to

My father, Djoko Prabowo Saebani, SH, M.Hum
(May you Rest in Peace, 15 April 2015)

My husband Syafruddin Kartikawulan and
my daughters Nadya Salsabila Syafruddin and Nida Hafiya Syafruddin

Content

Content i

Chapter 1
General Introduction 1
The HIV Epidemic among Transgender People 2
Sexual Behaviors of Transgender Sex Workers and their Clients 3
Health-seeking Behaviors of Transgender Individuals 5
Positioning this study in the context of Intervention Mapping approach 7
Socio-demographic Characteristics and Sexual Behaviors 8
Psychological Causes of HIV-related and Health-seeking Behaviors 9
The Psychology of Sexual Identity 13
Aims and Overview of the Thesis 13
References 15
Tables 25
Figures 27

Chapter 2
Male-to-Female Transgender Individuals (*Waria*) in Jakarta, Indonesia in the context of HIV transmission: Who are they and who is selling sex? 29
Introduction 31
Method 35
Recruitment Procedure 35
Interview Procedure 36
Questionnaire 37
Socio-demographic Characteristics 38
First Experience with Penetrative Sex and Current Sex Behavior 39
Factors Associated with Selling Sex 39
Type of Sex 40
Discussion 40
References 45

Chapter 3

Preparatory Behaviors and Condom Use during Receptive and Insertive Anal Sex among Male-to-Female Transgenders (*Waria*) in Jakarta, Indonesia 56

Introduction 56
Waria and Sexual Risk Behaviour 56
Methods 59
Recruitment Procedure 59
Interview Procedure 60
Questionnaire 61
Data Analysis 63
Results 64
Descriptive Analyses 64
Predicting Preparatory and Condom Use Behaviours 65
Getting Condoms 65
Carrying Condoms 65
Offering a Condom 66
Using Condoms during Receptive Anal Sex 66
Using Condoms during Insertive Anal Sex 67
Mediation Testing for Subjective Norms 67
Testing the Mediation of Subjective Norms related to Intention 68
Testing the Mediation of Subjective Norms related to Behaviour 68
Discussion 69
Conclusions 71
References 74
Tables 77

Chapter 4

A Survey on HIV-related Health-seeking Behaviors among Transgender Individuals in Jakarta, Based on the Theory of Planned Behavior 84

Background 84
Recruitment Procedure 88
Interview Procedure 90
Questionnaire 92

Data Analyses 95
Results 96
Background Characteristics 96
Predicting Behaviors 97
Mediation Testing for Attitude and Subjective Norms 98
Discussion 99
Conclusion 103
Abbreviations 104
Tables 110

Chapter 5
Socio-demographic Characteristics, Sexual Behaviors and Condom Use of Clients of Transgender Sex Workers (TSW) in Jakarta, Indonesia 115
Introduction 115
Objectives 120
Methods 121
Recruitment Procedure 121
Interview Procedure 123
Questionnaire 124
Data Analyses 127
Results 128
Demographic Characteristics 128
Past and Current Sex Behaviors 128
The TPB Analyses 129
Comparing Condom Use during Anal and Vaginal Sex 131
Discussion 131
References 137
Tables 144
Abstract 148

Chapter 6
Sexual Identity of Clients of Transgender Sex Workers in Jakarta, Indonesia 149
Introduction 149

Objectives 151
Recruitment Procedure 153
Interview Procedure 154
Questionnaire 156
Data Analyses 158
Results 158
Descriptive Findings 158
Main Findings 159
Discussion 162
References 167
Tables 170
Figures 172

Chapter 7
Summary and Discussion 176
Introduction 176
Contribution to the Intervention Mapping Process 177
TPB Testing on Condom Use-related and HIV-related Health-seeking Behaviors 179
TPB findings 180
Sexual Identity of Clients 182
Limitations 184
Recommendations 188
References 190
Tables 193
Summary 194
Samenvatting (Summary in Dutch) 199

Acknowledgement 205
Curriculum Vitae 212

"I believe that we really do know how to change behavior, and I would argue that we really don't need 'new' theories of behavior and behavior change. What we do need, however, is for investigators and interventionists to better understand and correctly utilize existing, empirically supported behavioral theories in developing and evaluating behavior change interventions."

(M. Fishbein, in AIDS CARE, 2000 vol. 12 no. 3, p. 277)

Chapter

1

General Introduction

Chapter 1.

General Introduction

The HIV Epidemic among Transgender People

Second only to Sub-Saharan Africa, Asia and the Pacific take the lead in the numbers of their populations living with HIV. In this region at the end of 2013 there were an estimated 4.8 million people infected with HIV. Of this total number 13% live in Indonesia (13%; see Figure 1). In most countries in Asia and the Pacific the populations most affected by the epidemic are sex workers and their clients, gay men and other men who have sex with men, transgender people, and people who inject drugs (UNAIDS, 2013). Among these populations, male-to-female transgender people (further simply referred to as transgender people/persons/individuals) are currently getting more attention since UNAIDS (in the Gap Report; 2014) has recognized that they are a population underserved with regard to HIV-infection prevention, treatment and care programs; they are stigmatized (because of their identity), and their health problems are neglected (WHO, UNDP, UNAIDS, Asia Pacific Transgender Network, 2013). As a result, UNAIDS (2013) reported that transgender people were 49 times more likely to acquire HIV than other adults of reproductive age. The data gathered from 39 studies in 15 different countries (i.e., the USA, six Asia-Pacific countries, five Latin American and three European countries) showed that almost a fifth of transgender persons were infected with HIV (Baral et al., 2013). In Indonesia, transgender people have the second highest HIV prevalence (21.9%), the first being people who inject drugs (36.4%; Ministry of Health Republic of Indonesia et al, 2011). With regard to the prevalence of sexually

transmitted infections (STIs), Table 1 shows that transgender people have the highest rates for syphilis (25.3%); and the third highest for rectal gonorrhea and/or chlamydia (42.8%), following female sex workers (FSW) for whom selling sex is the primary income (56.5%) or secondary income (48.6%; Ministry of Health Republic of Indonesia et al, 2011).

Considering these figures it would seem clear that in order to reduce the rate of HIV incidence and HIV transmissions among transgender people they should have access to the full spectrum of prevention services including (1) prevention education, (2) provision of prevention commodities (e.g., condoms), (3) regular STI screening and treatment, and (4) HIV testing and counseling (WHO, 2013; Prabawanti, 2011; Pisani, 2004). The research presented in this thesis is focused on the development of interventions to stimulate transgender individuals and their clients to make use of such services.

Sexual Behaviors of Transgender Sex Workers and their Clients

The term transgender is used most often to refer to people whose gender identity or expression differs from their sex at birth (Baral et al., 2013). The transgender identity has become an umbrella term to cover a number of similar categories (e. g., transsexual, transvestite or cross-dresser; http://en.wikipedia.org/wiki/Transgender). In Indonesia, transgender persons are referred to as *waria*, which comes from the words *wanita* (female) and *pria* (male). According to Oetomo (1991), waria are grouped as the third gender. Many describe themselves as women trapped in men's bodies (Oetomo, 1996).

Waria are considered to be at risk of contracting HIV because they often practice unprotected anal sex with men in commercial and/or non-commercial settings. In

addition, waria may have unprotected anal sex with multiple partners, whether by working as a commercial sex worker or by having non-commercial sex partners. Consequently, these high levels of HIV infection and sexually transmitted infections (STI) among transgender people, combined with inconsistent condom use, exposes waria's sexual partners to an increased risk of HIV infection and other STIs. Moreover, the fact that waria's sexual partners may in turn have varying and concurrent sexual partnerships with biological women or men (Operario, Burton, Underhill, & Sevelius, 2008; Nemoto, Operario, Keatley, Han, & Soma, 2004) further increases the risk of transmitting HIV and other STIs to these other sex partners (both female and/or male). This suggests that male partners of waria may play a central role as part of a "bridging population" in the spread of HIV infection and other STIs (Ota, Wariki, Mori, Hori, & Shibuya, 2011; Alary & Lowndes, 2004). Although waria might be expected to use condoms consistently when performing sexual risk behaviors this is not the case. Besides personal factors that contribute to an inconsistent use of condoms, many male sexual partners of transgender individuals are unwilling to use condoms during sexual relations, and the waria are not always successful in negotiating condom use (Bharat, Mahapatra, Roy, & Saggurti, 2013; Kamal, Hassan, & Salikon, 2013). Therefore, prevention interventions targeting both actors – waria and their sexual partners – are considered strategic to reduce transmission of HIV and other STIs. Development of effective prevention interventions to stimulate condom use must be based on adequate knowledge of the sexual behaviors of clients of waria sex workers.

Despite the reports of high prevalence of HIV and other STIs among transgender people, scientific evaluations of relevant interventions are scarce. Among the few available studies is a transgender-specific intervention developed and evaluated in Minnesota in the United States. The three-month follow up results showed significant

improvements in attitudes toward condom use, safer sex self-efficacy with regard to condom use, adherence to monogamy, and sexual risk behavior (Bockting, Robinson, Forberg, & Scheltema, 2005). A relevant comprehensive review is available, dealing with the effectiveness of prevention interventions to reduce unprotected anal sex among men who have sex with men (MSM; Johnson et al., 2008). This review covers 44 studies evaluating 58 interventions with 18.585 participants. The results indicate that behavioral interventions for MSM can work. These results can inspire the further development of effective interventions for transgender persons and their clients.

Health-seeking Behaviors of Transgender Individuals

As discussed earlier, HIV and STI prevalence rates among waria also indicate a serious need for access to HIV-related health services to provide effective treatment, break the chain of infection, and shorten the duration of infectivity. Waria should be encouraged to carry out health-seeking behaviors, including making use of the four essential HIV-related health services. The related health-seeking behaviors are: 1) visiting STI services regularly; 2) adhering to STI treatment; 3) taking an HIV test; 4) and picking up HIV test results.

Patients' non-adherence to screening and medical treatments remains a problem for both the medical professions and social scientists (Dulmen, Sluijs, Van Dijk, De Ridder, Heerdink, & Bensing, 2007). Results of a systematic review showed that approximately 20% to 50% of patients did not adhere to medical therapy (Kripalani, Yao, & Haynes, 2007). This low patient adherence has become a major barrier to the effectiveness of medications (Nieuwlaat et al., 2014). However, it is possible to design programs that adequately target screening and treatment behaviors. For example, a study among female sex workers (FSWs) in Indonesia provided STI screening with

sufficient coverage as an essential part of a comprehensive STI-control strategy. As a result, the STI-control program succeeded in reducing infection prevalence and increasing condom use among sex workers (Bollen et al., 2010).

In their 2011-2015 Strategy, UNAIDS (2010) aims at zero AIDS-related deaths by providing universal access to antiretroviral therapy (ART) for people living with HIV who are eligible for treatment. ART has proven to increase life expectancy in HIV-infected individuals, and has also been shown to be a cost-effective treatment (Walensky et al., 2009). However, early initiation of ART is needed to obtain optimum benefits (Cohen et al., 2011). In order to achieve this goal, individuals first need to be aware of their HIV status by undergoing an HIV test and getting the test results. As suggested by the Centers for Disease Control and Prevention in the USA, prevention interventions need to target high-risk populations and apply routine testing in these groups (Bayer & Fairchild, 2006). Some previous studies showed that HIV counseling and testing can also function as secondary prevention for HIV-positive individuals (Weinhardt, Carey, Johnson, & Bickham, 1999). The prevalence of unprotected sex behaviors decreased significantly after people received HIV testing and counseling and became aware of their HIV^+ status (Denison, O'Reilly, Schmid, Kennedy, & Sweat, 2008; Marks, Crepaz, Senterfitt, & Janssen, 2005).

To influence waria to make use of existing services for screening and treatment of STIs and HIV infection, we must understand the psychology underlying the following HIV-related health-seeking behaviors: 1) visiting the STI services regularly; 2) adherence to the STI treatment; 3) taking an HIV test; 4) and picking up the HIV test result.

Positioning this study in the context of Intervention Mapping approach

There is growing evidence that well designed, targeted, and theory-based behavior change interventions can be effective in reducing the spread of HIV. Understanding the psychological factors underlying the behaviors of condom use and health-seeking, and their role in behavioral prediction, can augment the development of effective behavior change interventions (Fishbein, 2000). One instrument available for the development of theory- and evidence-based health promotion programs is Intervention Mapping. This provides guidelines and tools for the selection of theoretical foundations for health promotion programs, for the application of theory, and for the translation of theory into actual program materials and activities (Kok, Schaalma, Ruiter, Van Empelen, & Brug, 2004). Intervention mapping describes the process of health promotion program development in six steps (Figure 2): (1) Conduct a needs assessment; (2) Formulate change objectives; (3) Select theory-based intervention methods and practical strategies to change (determinants of) health-related behavior; (4) Organize methods and application into an intervention program; (5) Plan adoption, implementation and sustainability of the program; (6) Generate an evaluation plan (Bartholomew, Parcel, Kok, Gottlieb, & Fernandez, 2011). To shape and finish each step in the Intervention Mapping process, specific types of information must be gathered. Often the needed information is available in the literature, preferably from well-designed studies. However, with regard to waria little information is available. It is therefore the aim of this thesis to provide necessary information for specific steps in the Intervention Mapping process. This information includes insight into the socio-demographic characteristics and sexual behaviors of waria and their clients, greater understanding of the psychological causes of condom use-related and HIV-related health-seeking behaviors, and knowledge on the sexual identity of clients.

Socio-demographic Characteristics and Sexual Behaviors

The Ministry of Health Republic of Indonesia has for several years conducted behavioral surveillance surveys among waria and has assessed their socio-demographic characteristics (e.g., age, educational level, ethnic background, and duration of living in Jakarta; Badan Pusat Statistik and Departemen Kesehatan, 2005; Departemen Kesehatan Republik Indonesia, 2009; Kementerian Kesehatan Republik Indonesia, Direktorat Jenderal Pengendalian Penyakit dan Penyehatan Lingkungan, 2011). Thus, with regard to some basic characteristics the population of waria has been mapped. However, we have little basic information regarding the demographic characteristics of the clients of waria sex workers.

With respect to sexual behaviors, behavioral surveillance surveys among waria sex workers in Jakarta showed that the median number of clients for anal sex in the past week was two in 2007 and three in 2011 (Departemen Kesehatan Republik Indonesia, 2009; Kementerian Kesehatan Republik Indonesia, Direktorat Jenderal Pengendalian Penyakit dan Penyehatan Lingkungan, 2011). These surveys focused on waria sex workers but did not distinguish between waria providing paid sex and those providing unpaid sex. Therefore, the present research further explores socio-demographic factors in relation to selling or not selling sex. In addition, as sufficient data are lacking with regard to the clients of waria sex workers, another purpose of this study is to profile the demographic characteristics and sexual behaviors of these clients.

Such knowledge is needed for further intervention development: according to Intervention Mapping, the first prerequisite is to understand the population with the health problem (Bartholomew, Parcel, Kok, Gottlieb, & Fernandez, 2011). In Step 1 the information on sociodemographics is used to profile the target groups; knowing these socio-demographic characteristics (e.g., age, gender, educational level, socio-economic

status, ethnicity, duration of living in Jakarta, and more) we will be able to define the boundaries and shared characteristics of the group (waria, clients) at risk for certain health problems. In Step 1 we also need to explore possible causes of health problems or risk factors that affect the health of this population. In the context of the health problem of HIV infections, HIV transmission and AIDS, unprotected sexual intercourse (during anal or vaginal sex) is a central behavioral cause. In Step 3 of Intervention Mapping this information can be used to design actual interventions: it may help with finding channels to expose target groups to interventions, and is essential for shaping all communication towards the target group. In Step 2 information on condom use and HIV-related health-seeking behaviors is also important in order to formulate the final performance objectives (*What are the central behaviors that should be changed to lower the problem?)*.

In conclusion, the present research aims to gather further knowledge on socio-demographic characteristics, sexual behaviors, condom use and/or HIV-related health-seeking behaviors of waria and the clients of waria sex workers to fill the gaps in the knowledge that is needed to develop interventions to prevent HIV transmission. Table 2 contains a summary of the data that have been collected and reported in the present thesis.

Psychological Causes of HIV-related and Health-seeking Behaviors

An important focus of this study is to examine the psychological causes of condom use-related behaviors of waria and clients of waria sex workers, and the psychological causes of the four HIV-related health-seeking behaviors of waria by using the theory of planned behavior (TPB). The TPB has been widely used for the prediction of human behavior (Ajzen, 2011). The TPB is a parsimonious model (McEachan, Conner, Taylor, &

Lawton, 2011), and it has been used as a basis, fully or at least in part, for several HIV prevention interventions (e.g., Kamb, Dillon, Fishbein, Willis, 1996; Kamb et al., 1998; Bryan, Aiken, & West, 1996; Basen-Engquist, 1994; Jemmott & Jemmott, 1992). A review of applications of the theory of planned behavior to health-related behaviors in general concludes: "The efficiency of the model seems to be quite good for explaining intention, perceived behavioral control being as important as attitude across health-related behavior categories. The efficiency of the theory, however, varies between health-related behaviors categories" (p. 87; Godin & Kok, 1996).

With regard to condom use, empirical studies, narrative reviews, and meta-analyses that apply the theory of planned behavior are available (Gredig, Nideroest, & Parpan-Blaser, 2006; Albarracin, Johnson, Fishbein, & Muellerleile, 2001; Rye, Fisher, & Fisher, 2001; Bennet & Bozionelos, 2000; Sheeran, Abraham, & Orbell, 1999; Sheeran & Taylor, 1999; Reinecke, Schmidt, & Ajzen, 1996; Godin et al., 1996). With regard to preparatory behaviors that usually precede actual condom use, such as buying condoms and negotiating condom use, some studies are also available (Van Empelen & Kok, 2008; Van Empelen & Kok, 2006; Bryan, Fisher, & Fisher, 2002). Furthermore, Albarracin, Johnson, Fishbein and Muellerleile (2001) reported a meta-analysis of 96 data sets from 42 reports on the study of the theory of reasoned action and the theory of planned behavior, or both, on condom use in vaginal sex and anal sex, in populations defined as at risk (e.g., heterosexuals, men who have sex with men/MSM, people who inject drugs, adolescents, students and teachers). However, of the studies reported in this meta-analysis none were specifically mentioned as targeted at transgender persons and the clients of transgender sex workers.

Unlike condom use behaviors, there is little known about people's health-seeking behaviors in relation to STIs. One of the few studies we found was an exploratory study

applying the theory of planned behavior (TPB) to stigma, STIs, and attendance at a Genito-Urinary Medicine (GUM) clinic in a close-knit community in the north of England (Mulholland & Wersch, 2007). There are also some studies on other screening behaviors that use the TPB as a theoretical framework, for example on attendance at cervical cancer screenings (Sheeran & Orbell, 2000), attendance and reattendance at breast cancer screening (Rutter, 2000), predicting health-check attendance (Norman & Conner, 1996), and attendance at breast screening in inner London (Sutton, Bickler, Sancho-Aldridge, & Saidi, 1994). One meta-analysis on screening programs using the Theory of Reasoned Action (TRA) identified 33 studies (e.g., cervical smear, genetic test, colorectal screen, mammogram, diabetes, tuberculosis screening, prenatal screening and health check (Cooke & French, 2008).

The interviewer was approaching waria during data collection at railway in East Jakarta

With regard to the behavior of HIV testing some studies are available on attending HIV counseling and testing among health professionals in the Jimma Zone, Ethiopia (Abamecha, Godesso, & Girma, 2013), among teachers from the Harari Region, Ethiopia (Omer & Haidar, 2010), among Tanzanian teachers (Kakoko, Astrøm, Lugoe, & Lie, 2006), and among MSM in Hongkong (Gu, Lau, & Tsui, 2011).

Thus there are studies on HIV-related health-seeking behaviors that apply TPB, but very few have been made on STI screening and HIV testing, and almost none on STI screening and HIV testing among transgender people. Again, to be able to develop interventions to lower HIV prevalence, we need to fill these gaps in our knowledge.

In Intervention Mapping, knowledge of the psychological determinants of specified behaviors is needed primarily in Step 2: once we have defined the behaviors that need to be changed we need to map the psychological causes of these behaviors, as interventions need to change these psychological causes in order to change behavior. Indeed, in Step 3 of Intervention Mapping, specified methods must be chosen that have the potential to change each of the psychological causes of behavior (Bartholomew, Parcel, Kok, Gottlieb, & Fernandez, 2011). Theoretical methods are general techniques or processes designed to bring about changes in the determinants of behaviors and environmental conditions. Many of these are specific to the psychological causes they can change. For example, some methods may changes attitudes, other methods may change subjective norms, and very different methods may change perceptions of control. Thus, to design the actual working elements in interventions, the methods, it is essential to know the psychological causes that need to be changed.

The Psychology of Sexual Identity

In the context of HIV-infection prevention interventions, clients of sex workers may co-determine the decision to practice safe-sex behaviors. However, common knowledge of clients' existence, interests and sex behaviors – men with specific interest in transgender sex – is hardly available. Men who have sex with transgender persons are viewed as having an unconventional sexual orientation. One qualitative study conducted in San Fransisco observed diversity in the ways clients identified and explained their sexual orientation, and found no consistent pattern between how they described their sexual orientation identity and their sexual behaviors and attraction to transgender persons (Operario, Burton, Underhill, & Sevelius, 2008). Therefore, to understand better the characteristics of clients of waria sex workers, we will examine also the sexual identity of the clients of waria sex workers, as suggested by Levay (1993), Shively & De Cecco (1977), Sell (1997) and Larson (1981), that is: (1) biological gender, (2) social gender, (3) sexual orientation, and (4) gender roles.

Relevant to Intervention Mapping, their sexual identity and their related sexual needs may, first, be related to their involvement in HIV-related behaviors as defined in Step 2. On the other hand, in designing interventions in Step 3 it is important to understand how people from the target group perceive themselves. Only then is it possible to communicate to them in an effective way. Thus, sexual identity information will further contribute to our knowledge of the target group and augment the application of Intervention Mapping.

Aims and Overview of the Thesis

In the framework of developing interventions we conducted research among waria and their clients. In this thesis we present and analyze data from structured interviews

with 209 waria and 250 clients in Jakarta, Indonesia. Chapters 2, 3 and 4 present data on waria. Chapter 2 discusses the sociodemographic characteristics and sexual behaviors of waria, such as selling sex, but also their first sexual experience. The research questions are "Who are waria?" and "What are the characteristics of the waria who are selling sex?" In Chapter 3 the TPB is applied to map the determinants of five HIV-related behaviors: (1) the three preparatory of condom use behaviors (getting, carrying and offering condoms); (2) condom use during receptive anal sex; and (3) condom use during insertive anal sex. To get a fuller picture of the determinants, mediation analyses are also conducted among the determinants. In Chapter 4 the TPB is applied to map the determinants of the four HIV-related health-seeking behaviors: visiting the STI services regularly, adherence to STI treatment, taking an HIV test, and picking up the HIV test result. Again, mediation is studied. Chapters 5 and 6 present the data on clients of waria sex workers. In Chapter 5 the TPB is applied to map the determinants of two condom use behaviors of clients: condom use during insertive anal sex with waria sex workers and condom use during vaginal sex with female partners. In Chapter 6 the sexual identity of clients is addressed: (1) gender identity; (2) social gender; (3) sexual orientation (i.e., self-identified sexual orientation, sexual attraction and sexual fantasies). Chapter 7 contains the general discussion of the research presented in this thesis. This chapter will reflect critically on the methods and results and formulate some final conclusions and recommendations for further research on waria and their clients in the framework of intervention development.

References

Abamecha, F., Godesso, A., & Girma, E. (2013). Intention to voluntary HIV counseling and testing (VCT) among health professionals in Jimma zone, Ethiopia: the theory of planned behavior (TPB) perspective. BMC Public Health, 13, 140. Retrieved from http://www.biomedcentral.com/1471-2458/13/140.

Alary, M., & Lowndes, C. M. (2004). The central role of clients of female sex workers in the dynamics of heterosexual HIV transmission in sub-Saharan Africa. *AIDS*, 18, 6, 945-947.

Albarracin, D., Johnson, B. T., Fishbein, M., & Muellerleile, P. A. (2001). Theories of reasoned action and planned behavior as models of condom use: A meta-analysis. *Psychological Bulletin*, 127, 1, 142-161.

Ajzen, I. (2011). The theory of planned behavior: Reactions and reflections. *Psychology and Health*, 26, 9, 1113-1127.

Badan Pusat Statistik and Departemen Kesehatan. (2005). Situasi Perilaku Berisiko Tertular HIV di DKI Jakarta: Hasil SSP tahun 2004 di Kota Jakarta (Situation of HIV Risk Behavior in DKI Jakarta: Results of BSS/Behavioral Surveillance Survey year 2004). Jakarta Pusat: Badan Pusat Statistik.

Baral, S. D., Poteat, T., Strömdahl, S., Wirtz, A. L., Guadamuz, T. E., & Beyrer, C. (2013). Worldwide burden of HIV in transgender women: a systematic review and meta-analysis. *Lancet Infectious Diseases*, 13, 214–22. doi: http://dx.doi.org/10.1016/S1473-3099(12)70315-8.

Bartholomew, L. K., Parcel., G. S., Kok, G., Gottlieb, N. H., & Fernandez, M. E. (2011). *Planning health promotion programs: An intervention mapping approach* (pp. 18-19). San Fransisco, CA: Jossey-Bass.

Basen-Engquist, K. (1994). Evaluation of a theory-based HIV prevention intervention for college students. AIDS Education and Prevention, 6, 5, 412-424.

Bayer, R., & Fairchild, A. L. 2006. Changing the paradigm for HIV testing: The end of exceptionalism. *New England Journal of Medicine*, 355, 7, 647-648.

Bharat, S., Mahapatra, B., Roy, S., & Saggurti, N. (2013). Are Female Sex Workers Able to Negotiate Condom Use with Male Clients? The Case of Mobile FSWs in Four High HIV Prevalence States of India. *PLoS ONE,* 8, 6, e68043. doi: 10.1371/journal.pone.0068043.

Bennett, P., & Bozionelos, G. (2000). The theory of planned behavior as predictor of condom use: a narrative review. *Psychology, Health and Medicine*, 5, 3, 307-326. doi: 10.1080/713690195.

Bockting, W. O., Robinson, B. E., Forberg, J., & Scheltema, K. (2005). Evaluation of a sexual health approach to reducing HIV/STD risk in the transgender community. *AIDS Care*, 17, 3, 289-303. doi: 10.1080/09540120412331299825.

Bollen, L. J., Anartati, A. S., Morineau, G., Sulami, S., Prabawanti, C., Silfanus, F. J., Esti, P. K., Nurhayati, Mahatmi, T., Sutarman, L., Rahadi, W., Natpratan, C., & Magnani, R. (2010). Addressing the high prevalence of gonorrhoea and chlamydia among female sex workers in Indonesia: results of an enhanced, comprehensive intervention. *Sexually Transmitted Infections*, 86, 1, 61-65. doi: 10.1136/sti.2009.038299.

Bryan, A. D., Aiken, L. S., & West, S. G. (1996). Increasing condom use: evaluation of a theory-based intervention to prevent sexually transmitted diseases in young women. *Health Psychology*, 15, 5, 371-382.

Bryan, A. D., Fisher, J. D., & Fisher, W. A.(2002). Test of the mediational role of preparatory safer sexual behavior in the context of the theory of planned behavior. Health Psychology, 21, 1, 71-80.

Cohen, M. S., Chen, Y. Q., McCauley, M., Gamble, T., Hosseinipour, M. C., Kumarasamy, N., Hakim, J. G., Kumwenda, J., Grinsztejn, B., Pilotto, J. H. S., Godbole, S. V., Mehendale, S., Chariyalertsak, S., Santos, B. R., Mayer, K. H., Hoffman, I. F., Eshleman, S. H., Piwowar-Manning, E., Wang, L., Makhema, J., Mills, L. A., De Bruyn, G., Sanne, I., Eron, J., Gallant, J., Havlir, D., Swindells, S., Ribaudo, H., Elharrar, V., Burns, D., Taha, T. E., Nielsen-Saines, K., Celentano, D., Essex, M., & Fleming, T. R. (2011). Prevention of HIV-1 Infection with Early Antiretroviral Therapy. *New England Journal of Medicine*, 11, 365, 6, 493–505. doi:10.1056/NEJMoa1105243.

Cooke, R., & French, D. P. (2008). How well do the theory of reasoned action and theory of planned behavior predict intentions and attendance at screening programs? A meta-analysis. *Psychology and Health*, 23, 7, 745-765. doi: http/dx.doi.org/10.1080/08870440701544437.

Denison, J. A., O'Reilly., Schmid, G. P., Kennedy, C. E., & Sweat, M. D. (2008). HIV voluntary counseling and testing and behavioral risk reduction in developing countries: A meta-analysis, 1990-2005. *AIDS and Behavior*, 12, 363-373. doi: 10.1007/s10461-007-9349-x.

Departemen Kesehatan Republik Indonesia (Departement of Health Republic of Indonesia). (2009). *Analisis kecenderungan perilaku berisiko terhadap HIV di Indonesia: Laporan survei terpadu biologi dan perilaku tahun 2007* (Trend analysis of HIV risk behavior in Indonesia: Report of integrated biological and behavioral survey year 2007).

Fishbein, M. (2000). The role of theory in HIV prevention. *AIDS CARE*, 12, 3, 273-278.

Godin G, & Kok G. (1996). The theory of planned behavior: a review of its applications to health-related behaviors. *American Journal of Health Promotion*, 11, 2, 87-98. doi: http://dx.doi.org/10.4278/0890-1171-11.2.87.

Godin, G., Maticka-Tyndale, E., Adrien, A., Manson-Singer, S., Willms, D., & Cappon, P. Cross-cultural testing of three social cognitive theories: An application to condom use. *Journal of Applied Social Psychology*, 26, 17, 1556–1586.

Gu, J., Lau, J. T. F., Tsui, H. (2011). Psychological factors in association with uptake of voluntary counselling and testing for HIV among men who have sex with men in Hong Kong. *Public Health*, 125, 275-282. Doi: 10.1016/j.puhe.2011.01.010.

Gredig, D., Nideroest, S., Parpan-Blaser, A. (2006). HIV-protection through condom use: testing the theory of planned behaviour in a community sample of heterosexual men in a high income country. *Psychology and Health*, 21, 5, 541-555. doi: 10.1080/14768320500329417.

Jemmott, L. S., & Jemmott, J. B. (1992). Increasing condom-use intentions among sexually active black adolescent women. *Nursing Research*, 41, 5, 273-279.

Johnson, W. D., Diaz, R. M., Flanders, W. D., Goodman, M,, Hill, A. N., Holtgrave, D., Malow, R., McClellan, W. M. (2008). Behavioral interventions to reduce risk for sexual transmission of HIV among men who have sex with men. *Cochrane Database of Systematic Reviews*, 3, CD001230. doi: 10.1002/14651858.CD001230.pub2.

Kakoko, D. C., Astrøm, A. N., Lugoe, W. L., Lie, G. T. (2006). Predicting intended use of voluntary HIV counselling and testing services among Tanzanian teachers using the theory of planned behavior. Social Science & Medicine, 63, 991–999. doi: 10.1016/j.socscimed.2006.02.016.

Kamal, S. M. M., Che Hashim Hassan, C. H., & Salikon, R. H. (2013). Safer sex negotiation and its association with condom use among clients of female sex workers in Bangladesh. *Asia-Pacific Journal of Public Health*, XX, X, 1–13. doi: 10.1177/1010539513510554.

Kamb, M. L., Dillon, B. A., Fishbein, M., & Willis, K. L. (1996). Quality assurance of HIV prevention counseling in a multi-center randomized controlled trial. Project RESPECT Study Group. *Public Health Reports*, 111, Suppl 1, 99-107.

Kamb, M. L., Fishbein, M., Douglas, Jr, J. M., Rhodes, F., Rogers, J., Bolan, G., Zenilman, J., Hoxworth, T., Malotte, C. K., Iatesta, M., Kent, C., Lentz, A., Graziano, S., Byers, R. H., & Peterman, T. A. (1998). Efficacy of risk-reduction counseling to prevent Human Immunodeficiency Virus and Sexually Transmitted Diseases: A randomized controlled trial. *Journal of American Medical Association*, 280, 13, 1161-1167. doi: 10.1001/jama.280.13.1161.

Kementerian Kesehatan Republik Indonesia, Direktorat Jenderal Pengendalian Penyakit dan Penyehatan Lingkungan (Ministry of Health Republic of Indonesia, Directorat General Disease Control and Health Environment). (2011). *Surveilans Terpadu Biologis dan Perilaku (STBP) 2011* (Integrated Biological and Behavioral Surveillance 2011).

Kok, G., Schaalma, H., Ruiter, R. A. C., Van Empelen, P., & Brug, J. (2004). Intervention mapping: A protocol for applying health psychology theory to prevention programmes. *Journal of Health Psychology*, 9, 1, 85-98.
doi: 10.1177/1359105304038379.

Kripalani, S., Yao, X., & Haynes, B. (2007). Interventions to enhance medication adherence in chronic medical conditions: A systematic review. *Archives of Internal Medicine*, 167, 540-550.

Larson, P. C. (1981). Sexual identity and self-concept. *Journal of Homosexuality*. 7, 1, 15-32.

Levay, S. (1993). *The sexual brain*. MIT Press, Cambridge, MA.

Marks, G., Crepaz, N., Senterfitt, W., & Janssen, R. (2005). Meta-analysis of high-risk sexual behavior in persons aware and unaware they are infected with HIV in the United States: Implications for HIV prevention programs. *Journal of Acquired Immune Deficiency Syndromes*, 39, 4, 446-453.

McEachan, R. R. C., Conner, M., Taylor, N. J., & Lawton, R. J. (2011). Prospective prediction of health-related behaviours with the Theory of Planned Behaviour: A meta-analysis. *Health Psychology Review*, 5, 2, 97-144.

Ministry of Health Republic of Indonesia., Ministry of Justice and Human Rights Republic of Indonesia.,, Provincial Health Offices and District Health Offices., National AIDS Commission/NAC., District AIDS Commission/DAC., GFATM., SUM/FHI/USAID., World Bank., CHAI., & GWL-INA. (2011). *Survei terpadu biologis dan perilaku pada kelompok berisiko tinggi di Indonesia 2011: Ringkasan Eksekutif* ((Integrated biological and behavioral survey among most at risk population in Indonesia 2011: Executive summary).

Mulholland, E., & Wersch, A. V. (2007). Stigma, sexually transmitted infections and attendance at the GUM clinic: An exploratory study with implications for the theory of planned behavior. Journal of Health Psychology, 12, 1, 17–31. doi: 10.1177/1359105306069098.

Nemoto, T., Operario, D., Keatley, J., Han, L., & Soma, T. (2004). HIV Risk Behaviors Among Male-to-Female Transgender Persons of Color in San Francisco. *American Journal of Public Health*, 94, 7, 1193-1199.

Nieuwlaat, R., Wilczynski, N., Navarro, T., Hobson, N., Jeffery, R., Keepanasseril, A., Agoritsas, T., Mistry, N., Iorio, A., Jack, S., Sivaramalingam, B., Iserman, E., Mustafa, R. A., Jedraszewski, D., Cotoi, C., & Haynes, R. B. (2014). Interventions for enhancing medication adherence. *Cochrane Database of Systematic Reviews*, 11, CD000011. doi: 10.1002/14651858.CD000011.pub4.

Norman, P., & Conner, M. (1996). Predicting health-check attendance among prior attenders and non-attenders: The role of prior behavior in the theory of planned behavior. *Journal of Applied Social Psychology*, 26, 11, 1010-1026.

Oetomo, D. (1991). Patterns of bisexuality in Indonesia. In R. Tielman, M. Carballo, & A. Hendriks (Eds), *Bisexuality and HIV/AIDS: A global perspectives* (pp. 119-126). New York: Promotheus.

Oetomo, D. (1996). Gender and Sexual Orientation in Indonesia. In L. J. Sears (Ed), *Fantasizing the Feminine in Indonesia* (pp. 259-269). Durham NC: Duke University Press.

Omer, S., & Haidar, J. (2010). Applicability of the theory of planned behavior in predicting intended use of voluntary HIV counseling and testing services among teachers of Harari Region, Ethiopia. *Ethiopian Journal of Health Development*, 24, 2, 96-102.

Operario D., Burton, J., Underhill, K., Sevelius, J. (2008). Men who have sex with transgender women: Challenges to category-based HIV prevention. *AIDS and Behavior*, 12, 1, 18-26.

Ota, E., Wariki, W. M. V., Mori, R., Hori, N., & Shibuya, K. (2011). Behavioral interventions to reduce the transmission of HIV infection among sex workers and their clients in high-income countries. *Cochrane Database of Systematic Reviews*, 12, CD006045. doi: 10.1002/14651858.CD006045.pub3.

Pisani E., Girault P., Gultom M., Sukartini N., Kumalawati J., Jazan., & Donegan, E. (2004). HIV, syphilis infection, and sexual practices among transgenders, male sex workers, and other men who have sex with men in Jakarta, Indonesia. *Sexually Transmitted Infections*, 80, 536–540. doi: 10.1136/sti.2003.007500.

Prabawanti C., Bollen L., Palupy R., Morineau G., Girault P., Mustikawati, D. E., Nurholis, M., Nurhayati., Aditya, E. R., Anartati, A. S., & Magnani, R. (2011). HIV, sexually transmitted infections, and sexual risk behavior among transgenders in Indonesia. *AIDS and Behavior*, 15, 665-673.

Reinecke, J., Schmidt, P., & Ajzen, I. (1996). Application of the theory of planned behavior to adolescents' condom use: A panel study. *Journal of Applied Social Psychology*, 26, 9, 749–772.

Rye, B. J., Fisher, W. A., & Fisher, J. D. (2001). The theory of planned behavior and safer sex behaviors of gay men. *AIDS and Behavior*, 5, 4, 307-317. doi: 10.1023/A:1013130721960.15, 665-673. doi: 10.1007/s10461-010-9790-0.

Rutter, D. R. (2000). Attendance and reattendance for breast cancer screening: A prospective 3-year test of the theory of planned behavior. British Journal of Health Psychology, 5,1-13.

Sell, R. L. (1997). Defining and measuring sexual orientation: A review. *Archives of Sexual Behavior*, 26, 6, 643-658.

Sheeran, P., Abraham, C., & Orbell, S. (1999). Psychosocial correlates of heterosexual condom use: A meta-analysis. *Psychological Bulletin*, 125, 1, 90-132.

Sheeran, P., & Taylor, S. (1999). Predicting intentions to use condoms: a meta-analyses

and comparison of the theories of reasoned action and planned behavior. *Journal of Applied Social Psychology*, 29, 8, 1624-1675.

Sheeran, P., & Orbell, S. (2000). Using Implementation intentions to increase attendance for cervical cancer screening. *Health Psychology*, 19, 3, 283-289. doi: 10.1037/0278-133.I9.3.283.

Shively, M. G., & DeCecco, J. P. (1977). Components of sexual identity. *Journal of Homosexuality*, 3, 1, 41-48.

Sutton, S., Bickler, G., Sancho-Aldridge, J., & Saidi, G. (1994). Prospective study of predictors of attendance for breast screening in inner London. *Journal of Epidemiology and Community Health*, 48, 65-73.

UNAIDS. (2013). *HIV in Asia and the Pacific: UNAIDS Report 2013*. Bangkok, Thailand: Joint United Nations Programme on HIV/AIDS (UNAIDS), Regional Support Team for Asia and the Pacific.

UNAIDS. (2014). *The gap report*. Geneva, Switzerland: Joint United Nations Program on HIV/AIDS (UNAIDS).

Van Dulmen, S., Sluijs, E., Van Dijk, L., De Ridder, D., Heerdink, R., & Bensing, J. (2007). Patient adherence to medical treatment: a review of reviews. *BMC Health Services Research*, 7, 55. doi: 10.1186/1472-6963-7-55.

Van Empelen, P., & Kok G. (2006). Condom use in steady and casual sexual relationships: planning, preparation and willingness to take risks among adolescents. *Psychology and Health*, 21, 2, 165-181. doi: 10.1080/14768320500229898.

Van Empelen P, Kok, G. (2008). Action-specific cognitions of planned and preparatory behaviors of condom use among Dutch adolescents. *Archives of Sexual Behavior*, 37, 626-640. Doi: 10.1007/s10508-007-9286-9.

Walensky, R. P., Wolf, L. L., Wood, R., Fofana, M. O., Freedberg, K. A., Martinson, N. A., Paltiel, A. D., Anglaret, X., Weinstein, M. C., & Losina, E. (2009). When to start Antiretroviral Therapy in resource-limited settings. *Annals of Internal Medicine*, 151, 3, 157-166. doi:10.7326/0003-4819-151-3-200908040-00138.

Weinhardt, L. S., Carey, M. P., Johnson, B. T., & Bickham, N. L. (1999). Effects of HIV counseling and testing on sexual risk behavior: A meta-analytic review of published research, 1985-1997. *American Journal of Public Health*, 89, 1397-1405.

WHO, UNDP, UNAIDS, Asia Pacific Transgender Network. (2013). *Joint Technical Brief: HIV, Sexually Transmitted Infections and Other Health Needs among Transgender People in Asia and the Pacific*.

Tables

Table 1

STIs Prevalence of Waria, Direct FSWs and Indirect FSWs in Indonesia 2011

STIs	Prevalence (%)		
	Waria (Rectal)	**Direct FSW (Vaginal)**	**Indirect FSW (Vaginal)**
Chlamydia	28.3	40.7	40.6
Gonorrhea	28.8	37.8	18.7
Chlamydia and or Gonorrhea	42.8	56.5	48.6
	Waria	**Direct FSW**	**Indirect FSW**
Syphilis	25.3*	10.2*	3.1*

Source: Ministry of Health Republic of Indonesia., Ministry of Justice and Human Rights Republic of Indonesia, Provincial Health Offices and District Health Offices, National AIDS Commission/NAC, District AIDS Commission/DAC, GFATM, SUM/FHI/USAID, World Bank, CHAI, & GWL-INA, 2011.

Table 2

Summary of Studies on Condom Use, HIV-related Health-seeking Behaviors, and Sexual Identity in Waria and the Client of Transgender Sex Workers

Data Collected	Waria	Clients of waria sex workers
1. Socio-demographic characteristics	√	√
2. Sexual behaviors	√	√
Preparatory behaviors of using condom		
3. Getting condoms	√	
4. Carrying condoms	√	
5. Offering condoms	√	
Condom use behaviors		
6. Using condom during receptive anal sex with male sexual partners (including commercial sex partners)	√	
7. Using condom during insertive anal sex with male sexual partners (including commercial sex partners)	√	
8. Using condom during insertive anal sex with waria sex workers		√
9. Using condom during vaginal sex with wife/girlfriend		√
10. Using condom during vaginal sex with FSWs/other women		√
HIV-related health-seeking behaviors		
11. Visiting STI services regularly	√	
12. Adherence to complete STIs treatment	√	
13. Taking for HIV test	√	
14. Picking up the result of HIV test	√	
Sexual Identity of Clients of Transgender Sex Workers		
15. Sexual gender		√
16. Sexual orientation		√
17. Gender roles		√

Figures

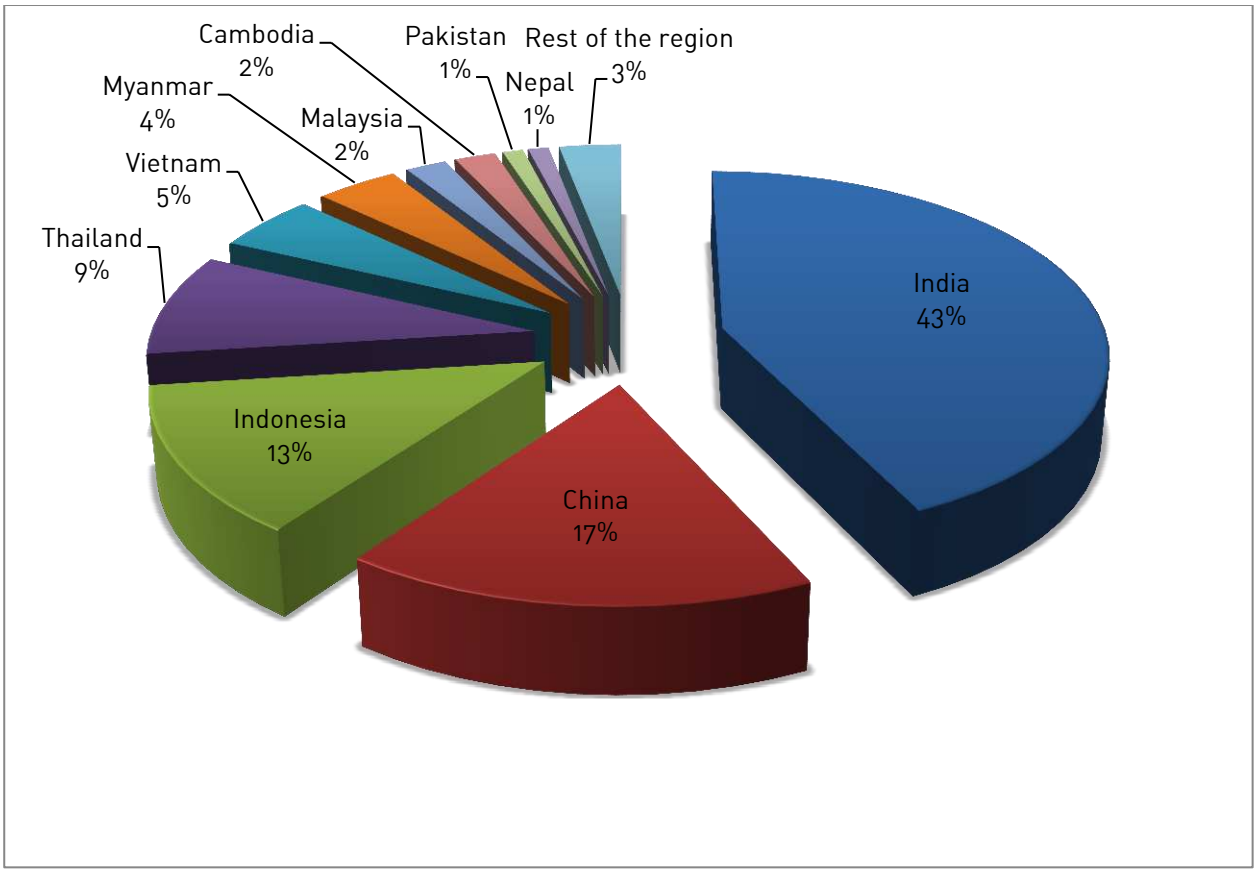

Figure 1. Estimates proportions of people living with HIV in different parts of the region in Asia and the Pacific 2013

Source: UNAIDS 2013 estimates

Step 1 **Needs Assessment**	• Establish a participatory planning group • Conduct the needs assessment • Assess community capacity • Specify program goals for health and quality of life
Step 2 **Matrices**	• State outcomes for behavior and environmental change • State performance objectives • Select important and changeable determinants • Create a matrix of change objectives
Step 3 **Theory-based intervention methods and practical applications**	• Generate program ideas with the planning group • Identify theoretical methods • Choose program methods • Select or design practical applications • Ensure that applications address change objectives
Step 4 **Intervention Program**	• Consult intended participants and implementers • Create program themes, scope, sequence, and material list • Prepare design documents • Review available program materials • Draft program materials and protocols • Pretest program materials and protocols • Produce materials and protocols
Step 5 **Adoption and** **Implementation**	• Identify adopters and implementers • Reevaluate the planning group • State program use outcomes and performance objectives • Specify determinants for adoption and implementation • Create a matrix of change objectives • Select methods and practical applications • Design interventions for adoption and implementation
Step 6 **Evaluation Plan**	• Review the program logic model • Write effect evaluation questions • Write evaluation questions for changes in the determinants • Write process evaluation questions • Develop indicators and measures • Specify evaluation design

Evaluation

Implementation

Figure 2. Intervention Mapping Steps and Tasks

Source: Bartholomew, Parcel, Kok, Gottlieb, & Fernandez, 2011

Chapter

2

Male-to-Female Transgender Individuals (*Waria*) in Jakarta, Indonesia in the context of HIV transmission: Who are they and who is selling sex?

Prabawanti C., Dijkstra A., Riono P. Male-to-Female Transgender Individuals (Waria) in Jakarta, Indonesia in the context of HIV transmission: Who are they and who is selling sex? (Manuscript will be submitted).

Abstract

Repeated behavioral surveys in Indonesia have reported anal sex to be a common practice between waria and their commercial and non-commercial sex partners (Pisani et al., 2004; Depkes Indonesia, 2009). Because this behavior is often unprotected (Baral et al., 2013), waria are at great risk of infection with and transmission of HIV. Public health interventions must target waria's behavior to lower these risks. For effective health campaigns one must understand the characteristics and behavior of the target group. This study attempts to answer the questions: "Who are waria?", "What factors are associated with their selling of sex?", and "Which sexual practices are related to selling sex?". 209 waria in Jakarta were interviewed using a standardized questionnaire. Data were gathered on socio-demographic factors, past and present sexual behaviors, and condom use. Results show that waria are most often of reproductive age, unmarried, and living in Jakarta for a long time. Most had their first sexual experience with a man (92.8%), usually as receptive partner. At present about 60% practice commercial sex; this was also related to more consistent condom use. The data gathered can help to improve HIV-infection preventive interventions.

Keywords: Transgender, selling sex, sex work, sex behavior, Jakarta-Indonesia

Chapter 2.

Male-to-Female Transgender Individuals (*Waria*) in Jakarta, Indonesia in the context of HIV transmission: Who are they and who is selling sex?

Introduction

Repeated behavioral surveys among *waria* in Indonesia have reported that anal sex is a common practice between waria and their commercial and non-commercial sex partners (Pisani et al., 2004; Departemen Kesehatan Indonesia, 2009). As a result, because this sexual behavior is often unprotected, it contributes to the transmission of HIV (Baral et al., 2013).

The term 'transgender' is used mostly to refer to people whose gender identity or expression differs from their sex at birth (Baral et al., 2013). The transgender identity has become an umbrella term that covers a number of similar categories (e. g., transsexual, transvestite or cross-dresser; http://en.wikipedia.org/wiki/Transgender). In Indonesia, transgender individuals are called waria, stemming from the words *wanita* (female) and *pria* (male). According to Oetomo (1991), waria can be considered a third gender. Many describe themselves as women trapped in men's bodies (Oetomo, 1996).

Many waria in Indonesia engage in commercial sex (Oetomo, 1991); in fact, a recent Integrated Biological and Behavioral Surveillance Survey (2011) in Indonesia reported a percentage as high as 73-94% of transgender persons thus involved. The lowest and highest percentages were in Jakarta and Semarang, respectively (Ministry of

Health Republic of Indonesia et al, 2011). This proportion is in line with that estimated by the United Nations Development Program (UNDP) in their report on transgender rights and HIV in Asia (Poteat et al., 2014): 54-80% of Asian transgender individuals had a history of sex work. That this is not, however, only an Asian phenomenon is suggested by a meta-analysis of the transgender population in the USA where 24-75% of transgender persons were reported to sell sex (Herbst, Jacobs, Finlayson, et al., 2008). Besides being involved in commercial sex, according to the behavioral survey in Indonesia, waria were found to be the second highest in a ranking among risk groups with regard to involvement in non-commercial sex relations (Pisani et al., 2004). Thus, whether commercial or not, many waria have frequent sex, possibly with multiple subsequent partners. This puts them at risk for HIV infection and the transmission of HIV, especially when they engage in unprotected (anal) sex (Baral et al., 2013). Therefore, to be able to influence the spread of HIV it is essential that we learn more about waria and those of them who sell sex.

To better understand waria's engagement in commercial sex it is important to clearly define commercial sex, "selling" sex or being a sex worker. Harcourt and Donovan (2005) define a sex worker as an individual who provides sexual services for money or its equivalent. However, while some may fully participate in the provision of commercial sex services, others who may only occasionally or opportunistically receive cash or gifts for their services can also be regarded as sex workers. Indeed, Harcourt and Donovan (2005) make a related further distinction between selling sex as the primary source of income (e.g., on the street, brothel, club/pub/bar/karaoke bar, stations, terminals), and selling sex as an additional source of income for individuals with low incomes or irregularly paid work (e.g., massage parlors, street vendors and traders, beer

girls, sex for drugs, survival sex; Aral et al., 2003; Harcourt & Donovan, 2005). Not all waria may sell sex, but those who do may do so to earn a primary or secondary income.

Waria and a man at one of cruising sites in North Jakarta

Waria may have different but simultaneous motivations to sell sex. First of all is the economic motivation. For waria this motive may be especially relevant because they have limited access to the regular job market because of discrimination (including employment discrimination) and stigmatization (Nemoto, Operario, Keatley, & Villegas, 2004), and because there is no legal status for people with a transgender identity (Poteat et al., 2014). This depreciated societal situation may encourage them to enter sex work. Their dependence on commercial sex work involves additional dangers, as it reduces waria's power to negotiate for the use of condoms when they engage in sexual risk behaviors (Nemoto, Operario, Keatley, & Villegas, 2004; Herbst et al., 2008; Poteat

et al., 2014). In addition, clients may offer higher payment for having sex without condoms, which may persuade waria to compromise their safe sex principles (Nemoto et al., 2004). Similarly, money may motivate waria to get more clients so as to receive a higher income. One further economic factor for waria is that they are the bottom of the social hierarchy of sex workers, thus receiving less money than other sex workers (Boles and Elifson, 1994). Thus we can conclude that the economic motives of waria may not only drive their commercial sex behaviors but also their risk-taking behaviors with regard to HIV.

Besides economic motives other motives may play a role in selling sex. For example, transgender individuals view sex work as an entrance into a wider social network that can provide them with feelings of community and social support, often lacking in their family contexts (Sausa, Keatley, & Operario, 2007). Their strong need for social support may originate from experiences of social rejection and marginalization. This social exclusion affects their self-perception and sense of worth (UNAIDS, 2014), and may motivate them to join the world of waria sex workers in order to gain a distinct social identity. The sex work with male clients may also be related to these social and identity needs, as it reinforces their female-like gender identity, in turn providing them with attention and being held and touched in a gentle way (Nemoto et al., 2004). Of course such psychological motives may underlie waria's non-commercial sexual behaviors as well. Nemoto et al. (2004) reported that transgender people tended to differentiate between two relational contexts: sex with customers versus sex with primary partners. Although the motives can be similar, the sexual practices may differ: transgender individuals did not use condoms with their primary partners and in the context of a romantic relationship (Nemoto et al., 2004). With the primary partners sex was viewed as a sign of trust and love. Unprotected sex was a way to increase feelings of

intimacy and connection with primary partners, and condoms were perceived as an obstruction to their tender motives.

In conclusion, waria are a group at great risk of getting and transmitting HIV. Therefore, public health interventions should target waria's behavior so as to lower these risks. To develop effective health campaigns it is essential to understand the characteristics of the target group and their behavior. This study therefore proposes to answer the questions: (1) Who are waria? (2) What factors are associated with their selling of sex? (3) Which sexual practices are related to selling sex? For this purpose over 200 waria in Jakarta were interviewed using a standardized questionnaire.

Method

Recruitment Procedure

Waria for this study were recruited using a cluster sampling procedure with the five municipalities in Jakarta as groups (Central, North, South, East and West) representing all locations where waria live. The first author recruited participants in the Center of Jakarta (n=23), East Jakarta (n=74), West Jakarta (n=45), South Jakarta (n=45), and North Jakarta (n=22) between September and October 2007. In total, 209 waria were included, comprising almost 16% of the last total estimated number of waria in Jakarta.

Waria often live in small groups, coordinated by a ring leader or '*mami*'. A mami is usually a senior waria who provides support for the 5-15 waria in her group, including violence protection and promotion of condom use, uptake of HIV testing, and regular STI check-ups (Prabawanti, 2011). The Srikandi Sejati Foundation, the waria organization in Jakarta, provided for this research a list of waria living areas, and all mamis in the five districts were asked to contact waria to participate in the assessments. In the selected

areas, mamis listed the waria who were present and available in sampled living areas at the time of data collection. All were approached and included in the study.

Interview Procedure

The present study was part of a broader study covering a range of behaviors related to condom use and HIV-related health-seeking behaviors. It was approved by the Ethical Committee Psychology at the University of Groningen, the Netherlands and the Ethical Committee of Psychology at the University of Indonesia. This article provides data only on socio-demographic characteristics, the first experience of penetrative sex, sexual risk behaviors, and factors associated with sex selling among waria. The interviews were structured and conducted face-to-face. The duration of the interviews ranged from 45 to 60 minutes.

Five interviewers, including the first author, were involved in data collection. Informed consent was prepared on two levels. First, permission was granted by the mamis as coordinators and leaders of the waria in each district. This permission was given after a meeting held with all mamis to explain the purpose of the study and the possibility for waria to refuse participation. Secondly, the interviewers introduced themselves to the respondents and informed them of the purpose of the study. Respondents were told that participation was voluntary and that they could withdraw at any time without stating a reason. They were then asked whether they had understood the information and were willing to participate. The actual interviews started after individuals had given verbal consent. For respondents under 18 years old, verbal consent was given by the mamis. Unwritten informed consent was chosen for this study to assure the anonymity and confidentiality of the respondents. Interviews were conducted at different venues; using the networks of the mamis, we found quiet places or separate

rooms to conduct the interviews. Most of the interviews were conducted in waria's bedrooms, some in the salons, and the rest in the Primary Health Center or in mamis' living rooms.

Questionnaire

This section introduces only the questions related to the purposes of this paper. Socio-demographics included age, educational level (in ten levels/years), marital status, ethnicity, social living situation, type of job, and duration of residence in Jakarta.

Sexual risk behaviors were assessed with the following questions: *With whom do you have sex currently?* with answering options: *only men, mostly men, men and women equally, mostly women, only women; What type of sex do you most often engaged in?* with answering options: anal sex as the receptive partner, insertive partner, both as receptive and insertive partner, receiving oral sex, giving oral sex, insertive vaginal sex and others; *In the past week, how many clients/partners did you have?* and, *In the past month, how many clients/partners did you have?*

Condom use was assessed by asking: *In the last month, did your clients/partners use condoms when you had receptive anal sex?* and, *In the last month, did you use condoms when you had insertive anal sex?* using a 7-point scale ranging from *never (1), seldom (2), sometimes* (3), *regularly* (4), *often* (5), *very often* (6), to *always* (7).

In addition, sexual history was assessed by asking the age of the respondent at the first penetrative sex, the gender of this first sexual partner (female, male or waria), the relationship of the respondent with this first sexual partner (girlfriend, boyfriend, wife, friend, sex worker, others), and the type of sex (anal sex as a receptive partner, as an insertive partner, both as a receptive and an insertive partner, and insertive vaginal sex).

Results

Socio-demographic Characteristics

As presented in Table 1, 209 waria took part in the study. Their mean age was 30 years (ranging from 15 to 67 years old), and more than half (52.4%) had completed junior high school or lower. In addition, most waria indicated that they were unmarried (89.5%).

The ethnic background of waria's mothers was distributed evenly among Javanese and Sundanese, each comprising about one third of the sample. The rest indicated various other ethnic backgrounds. Since Indonesia is one of the biggest Islamic countries in the world, it was predictable that most waria reported themselves to be Moslems. Less than 10% reported to be Christian/Catholic or Buddhist.

The fact that almost half of the waria had been living in Jakarta for more than ten years, and 18.7% had been living there for six to ten years, shows that they were most likely part of the permanent population of this metropolis. Almost half of the waria lived alone (45%).

Selling sex was an important source of income for waria: 35.9% reported selling sex as their primary source of income, while 24.4% reported selling sex as their additional income. Thus approximately 60% of the 209 waria were engaged in commercial sex. Those who indicated that they did not sell sex reported doing various jobs (not shown in Table 1) such as street singer, fashion stylist, therapist, entertainer, designer, wardrobe manager in a production house, marketer, employee, or teacher.

First Experience with Penetrative Sex and Current Sex Behavior

As shown in Table 1, almost 60% of the waria had their sexual debut between ages 11 and 17. Most had their first experience of penetrative sex with a man (92.8%) and were themselves the receptive partner (80.9%). Waria's first penetrative sex partners were identified as boyfriend (26.3%), friends (34.9%), and others (32.5%), the latter identified as strangers, neighbors, and teachers. Currently, most waria still had sex with men (80%), and almost half stated that they "most often" practiced receptive anal sex (45.5%); only a few practiced insertive anal sex (2.9%). Of the 209 waria studied, most currently had sex only with men (80%).

Factors Associated with Selling Sex

According to their own accounts waria were categorized into one of three groups: selling sex as primary income (n=75), selling sex as additional income (n=51), and not selling sex (n=83). These groups were compared using several variables, and the means, standard deviations and percentages are presented in Table 2.

Using an ANOVA, the groups differed significantly as to age, F (2, 206) = 5.16, p < .01, and number of clients/partners in the past week, F (2, 206) = 34.6, p < .001, and past month, F (2, 206) = 24.93, p < .001. Those who did not sell sex were the oldest, and reported fewer sexual contacts.

The three groups were now compared according to several categorical variables using Chi-square analyses. No significant differences were found regarding level of education, religion, with whom they lived in Jakarta, and with whom they currently had sex. However, a significant relationship was found between the ethnic background of the mothers and the selling of sex, X^2(4, N = 209) = 10.12, p < .05: among the waria with another background than Javanese or Sudanese, 50% did not sell sex, and only 16.7% sold

sex as additional income. In addition, the groups differed significantly as to the number of years they lived in Jakarta, $X^2(4, N = 209) = 10.121$, $p < .05$: Waria who lived over 10 years in Jakarta were more often not selling sex (49%), and only 18.6% had sold sex as additional income. Another significant relationship was found between marital status and selling sex, $X^2(2, N = 209) = 8.320$, $p < .05$: of the waria who were married/ever married, only 9.1% sold sex as a primary income.

Type of Sex

As shown in Table 3, with regard to the type of sex, the groups differed significantly, $X^2(6, N = 209) = 14.88$, $p < .05$: fewer of those who sell sex for additional income seem to engage in receptive anal sex (33.3% against 48% and 50.6% in the other two groups). In addition, the groups differed significantly on whether they used a condom during receptive anal sex, $X^2(2, N = 165) = 11.87$, $p < .05$: waria for whom selling sex was their primary income more often used a condom (94.2%) compared to those who sold sex as additional income (86%) and those who did not sell sex (71.7%).

Discussion

Our answer to the first research question: Who are waria? is that they can be characterized as being in the reproductive age, unmarried, and living in Jakarta for a longer period. As reported in the Behavioral Surveillance Survey in Indonesia 2004-2005, preferences of waria for working in certain cities are apparent, and Jakarta is one of the favorite destinations in Java for living (Badan Pusat Statistik and Departemen Kesehatan, 2005). This fact may also explain why two-thirds of waria have an ethnic background from area in or surrounding Java. In addition, most waria were Moslem, as is the majority of Indonesia's population.

The median age of waria in Jakarta who participated in the present study (29 years old) was similar to that in other studies on waria in Jakarta. In 2004, they were 30 years old (Badan Pusat Statistik and Departemen Kesehatan, 2005), in 2007, 29 years old (Departemen Kesehatan Republik Indonesia, 2009), and in 2011, 30 years old (Kementerian Kesehatan Republik Indonesia, Direktorat Jenderal Pengendalian Penyakit dan Penyehatan Lingkungan, 2011). As the population does not seem to grow older, its members must change: New members arrive and older members leave the population. New waria may keep coming from other cities to Jakarta because of its attraction as the capital city, its role as a center of economics, and its promise of a wealthier life and a 'more' tolerant social environment.

As with their ages, the waria's level of education also seems to have been stable over the years: in subsequent years almost 66% (2004), 59% (2007), and 57.4% (2011) of waria in Jakarta had only primary education or less (Badan Pusat Statistik and Departemen Kesehatan, 2005; Departemen Kesehatan Republik Indonesia, 2009; Kementerian Kesehatan Republik Indonesia, Direktorat Jenderal Pengendalian Penyakit dan Penyehatan Lingkungan, 2011). In the present study, more than half (52.4%) of the participants had only primary education or less (Table 1). The education level of waria seems to be lower than that of men who have sex with men (MSM). The survey among MSM during the same period showed that only 1.6% of MSM had completed only primary school, while almost 78% of them had completed high school (Department of Health, BPS, USAID, KPA and FHI/ASA, 2007). These data suggest that waria still have limited access and opportunity to complete education. This may be related to social rejection and discrimination, and possibly to a lack of legal recognition of their gender, which makes it difficult for them to get identification papers that reflect who they are.

Without appropriate identity papers, transgender people are excluded from education and, accordingly, from employment (UNAIDS, 2014).

Regarding the first experience of penetrative sex, most of the waria's first sex partners were male (92.8%), and the waria acted as receptive partners in anal sex (80.9%). These personal history figures are in line with the current facts that almost 90% of waria have sex only with men and almost half of them "most often" practice receptive anal sex (45.5%). Overall, these figures show a consistent pattern of waria's preferences for a man as sexual partner. Although waria are sexually equipped as males, many perceive themselves as a woman trapped in a man's body, and they seem to prefer the "classical" female role. More than half of waria's first penetrative sex partners were identified as a boyfriend or as friends, although one third of them may have had sexual abuse experiences, as they identified their first penetrative sex partners as strangers, neighbors, and teachers.

With regard to the second research question: What factors are associated with selling sex? some meaningful associations were found. Waria who sell sex as a primary income were younger, while waria who did not sell sex were older. Although the reason for this is not clear, it may be that clients prefer younger waria. Those who sell sex to obtain a primary income also lived for a shorter time (<10 years) in Jakarta. In addition, after having lived for more than 10 years in Jakarta it seems that waria less often sold sex as additional income, while the proportion of waria who did not sell sex increased to almost 50%. This could mean that new, younger waria come to Jakarta and enter the population to sell sex, while over the years as they grow older this behavior changes. This pattern may illustrate waria's sexual commercial career. The ethnic background of the mother was also related to selling sex: among waria whose mothers were not Sundanese or Javanese, fewer waria indicated to sell sex as additional income (16.7%). It

seems that they either fully engaged in commercial sex (32.4%) or not at all (50%). We cannot explain this pattern. Lastly, selling sex was also related to marital status. Unsurprisingly, unmarried waria were more likely to sell sex than were married/ever married ones.

Another factor associated with selling sex was the number of clients or partners in the past week and the past month. This is a measure of the number of sexual contacts. The average number of contacts in the past week was 5.6, and in the past month was 15.4. The results show an expected linear trend: The more important selling sex was as income, the more sexual contacts they had. It also illustrates that selling sex is accompanied with a potential of greater exposure to risky sexual situations. However, present data also show that waria who sell sex as their primary source of income are more likely to use condoms consistently during receptive anal sex. This behavior may reflect an awareness of risk, which may also be related to the finding that transgender persons more consistently used condoms with their commercial sex partners than with their primary partners (Nemoto, Operario, Keatley & Villegas, 2004; Poteat et al., 2014).

The third research question was: What sexual practices are related to selling sex? Results suggest that waria who sell sex as primary income limit themselves to two types of sex: anal sex as a receptive partner and providing oral sex. This may be related to the wishes of most clients, and it may reflect the waria's female role. Waria who did not sell sex but especially waria who sold sex as additional income, engaged in more varying types of sex, probably because they more often can choose what they want. However, being a receptive partner and providing oral sex were still the most prevalent types.

One important question regarding the methods used in this study concerns the extent to which the sample which we succeeded in gathering (N=209) is representative of the total population of waria in Jakarta. Although some uncertainty about this

remains, measures were taken to recruit a sample similar to the total population. Firstly, almost 100% of the waria who were approached gave consent. This high rate may be related to the mamis' role in the recruitment: they informed waria that they could be approached to be interviewed. Importantly, the mamis must not be regarded as pimps but more as senior waria with authority who also "take care" of waria who are not selling sex. Secondly, in collaboration with the waria organization and with the mamis, waria were approached at the representative hot spots in Jakarta, throughout all five districts. Despite these measures, it is possible that some selection took place. For example, recruiting at hot spots on the streets may miss the "highest status" waria who work at another level of the network. Still, it can at least be expected that the present sample does not differ very much from the total population.

In conclusion, waria in Jakarta seem to be a stable, fresh, and unmarried population in their late twenties, with a low level of education, of whom about 60% sell sex. This information gives us input to develop targeted interventions. Although further research is needed, it is plausible that waria come to Jakarta at a younger age to sell sex but that they change their practices when they grow older. Thus, one intervention strategy might be to target these new waria who refresh the population. However, long-term effectiveness depends on a continuous ongoing preventive community intervention to support safe sex behaviors on the part of waria.

References

Aral, S.O., Lawrence, J.S.ST., Tikhonova, L., Safarova, E., Parker, K.A., Shakarishvili, A., & Ryan, C.A. (2003). The social organization of commercial sex work in Moscow, Russia. *Sexually Transmitted Diseases*, 30, 1, 39-45.

Badan Pusat Statistik and Departemen Kesehatan. (2005). *Behavioral Surveillance Survey Result (BSS) in Indonesia 2004-2005*. Jakarta, Indonesia: Statistics-Indonesia.

Badan Pusat Statistik and Departemen Kesehatan. (2005). *Situasi Perilaku Berisiko Tertular HIV di DKI Jakarta: Hasil SSP tahun 2004 di Kota Jakarta* (Situation of HIV Risk Behavior in DKI Jakarta: Results of BSS/Behavioral Surveillance Survey year 2004). Jakarta Pusat: Badan Pusat Statistik.

Baral, S.D., Poteat, T., Strömdahl, S., Wirtz, A. L., Guadamuz, T. E., & Beyrer, C. (2013). Worldwide burden of HIV in transgender women: a systematic review and meta-analysis. *Lancet Infectious Diseases*, 13, 214–22. doi: http://dx.doi.org/10.1016/S1473-3099(12)70315-8.

Boles J., & Elifson, K. W. (1994). The social organization of transvestite prostitution and AIDS. *Social Science and Medicine*, 39, 1, 85-93.

Department of Health, BPS, USAID, KPA and FHI/ASA. (2007). *Integrated Biological-Behavioral Surveillance among Most-at-Risk-Groups (MARG) in Indonesia, 2007: Surveillance Highlights Waria*.

Departemen Kesehatan Republik Indonesia (Departement of Health Republic of Indonesia). (2009). *Analisis kecenderungan perilaku berisiko terhadap HIV di Indonesia: Laporan survei terpadu biologi dan perilaku tahun 2007* (Trend analysis of HIV risk behavior in Indonesia: Report of integrated biological and behavioral survey year 2007).

Harcourt, C., and Donovan, B. (2005). The many faces of sex work. *Sexually Transmitted Infections*, 81, 201-206. doi: 10.1136/sti.2004.012468.

Herbst, J.H., Jacobs, E.D., Finlayson, T.J., McKleroy, V.S., Neumann, M.S., & Crepaz, N. (2008). Estimating HIV prevalence and risk behaviors of transgender persons in the United States: A systematic review. *AIDS Behavior*, 12, 1–17. doi: 10.1007/s10461-007-9299-3.

Kementerian Kesehatan Republik Indonesia, Direktorat Jenderal Pengendalian Penyakit dan Penyehatan Lingkungan (Ministry of Health Republic of Indonesia, Directorat General Disease Control and Health Environment). (2011). *STBP (Surveilans Terpadu Biologis dan Perilaku) 2011* (Integrated Biological and Behavioral Surveillance 2011).

Ministry of Health Republic of Indonesia/MOH RI., Ministry of Justice and Human Rights Republic of Indonesia., National AIDS Commission/NAC., GFATM., SUM1/USAID., & Worldbank. *Survei terpadu biologis dan perilaku pada kelompok berisiko tinggi di Indonesia 2011. Lembar Fakta: Waria* (Integrated biological and behavioral survey among most at risk population in Indonesia 2011. Fact sheet: Waria).

Nemoto T., Operario D., Keatley J., & Villegas D. (2004). Social context of HIV risk behaviours among male-to-female transgenders of colour. *AIDS CARE*, 16, 6, 724-735.

Oetomo, D. (1991). Patterns of bisexuality in Indonesia. In R. Tielman, M. Carballo, & A. Hendriks (Eds), *Bisexuality and HIV/AIDS: A global perspectives* (pp. 119-126). New York: Promotheus.

Oetomo, D. (1996). Gender and Sexual Orientation in Indonesia. In L. J. Sears (Ed), *Fantasizing the Feminine in Indonesia* (pp. 259-269). Durham NC: Duke University Press.

Pisani E., Girault P., Gultom M., Sukartini N., Kumalawati J., Jazan., & Donegan, E. (2004). HIV, syphilis infection, and sexual practices among transgenders, male sex workers, and other men who have sex with men in Jakarta, Indonesia. *Sexually Transmitted Infections*, 80, 536–540. doi: 10.1136/sti.2003.007500.

Poteat, T., Wirtz, A.L., Radix, A., Borquez, A., Silva-Santisteban, A., Deutsch, M.B., Khan, S.I., Winter, S., & Operario, D. (2014). HIV risk and preventive interventions in transgender women sex workers. *The Lancet: HIV and sex workers*, July, 88-100. doi: http://dx.doi.org/10.1016/S0140-6736(14)60833-3.

Prabawanti C., Bollen L., Palupy R., Morineau G., Girault P., Mustikawati, D.E., Nurholis, M., Nurhayati., Aditya, E.R., Anartati, A.S., & Magnani, R. (2011). HIV, sexually transmitted infections, and sexual risk behavior among transgenders in Indonesia. *AIDS and Behavior*, 15, 665-673. doi: 10.1007/s10461-010-9790-0.

Sausa, L.A., Keatley, J., & Operario, D. (2007). Perceived risks and benefits of sex work among transgender women of color in San Fransisco. *Archives of Sexual Behavior*, 36, 768-777. doi: 10.1007/s10508-007-9210-3.

UNAIDS. (2014). The gap report. Geneva, Switzerland: Joint United Nations Program on HIV/AIDS (UNAIDS).

Tables

Table 1

Socio-demographic characteristics among waria in Jakarta

		N	%
Socio-demographic Characteristics			
Recruited Respondents		209	100
Age			
<= 24		58	27.8
25-29		52	24.9
30-36		51	24.4
>=37		48	23
Mean	30		
Median	29		
SD	8.8		
Education Level		206	
Primary school (≤6)		49	23.8
Junior school (7-9)		59	28.6
High school/Academy/University (≥10)		98	47.6
Mean	9.3		
Median	9		
SD	3.4		
Sources of income by selling sex			
Selling sex as a primary income		75	35.9
Selling sex as an additional income		51	24.4
Not selling sex		83	39.7
Ethnic background of mother			
Javanese		72	34.4
Sundanese		65	31.1
Others (Batak, Betawi, Makassar, Bima, Lampung, Minang, Acehnese, Sasak, etc)		72	34.4
Religion			
Moslem		190	90.9
Christian/Catholic		16	7.7
Buddhist		3	1.4
Duration living in Jakarta			
≤5 year/s		68	32.5
6-10 years		39	18.7
>10 years		102	48.8
Mean	30.5		
Median	10		
SD	38.1		
Marital Status			
Unmarried		187	89.5
Married		10	4.8
Divorce & separate		12	5.7
With who lived in Jakarta			
Alone		94	45
Friends		50	23.9
Family		25	12
Regular partner		40	19.1

		N	%
First experience of penetrative sex			
Age			
<=10		15	7.2
11-17		123	58.9
>=18		71	34
Mean	16.3		
Median	16		
SD	4.6		
First sex partner			
A man		194	92.8
A woman		15	7.2
Type of first sex partner			
Girlfriend		4	1.9
Boyfriend		55	26.3
Wife		2	1
Friend		73	34.9
Sex worker		7	3.3
Other		68	32.5
Type of sex behavior			
Anal sex as a receptive partner		169	80.9
Anal sex as an insertive partner		6	2.9
Anal sex as both a receptive and an insertive partner		11	5.3
Vaginal sex as an insertive partner		13	6.2
Giving oral sex		9	4.3
Thigh sex		1	0.5
Sexual Risk Behavior			
With who have sex currently			
Only men		184	88
Mostly men		18	8.6
Men and or women		7	3.3
Type of sex do you most often engaged in			
Anal sex as a receptive partner		95	45.5
Anal sex as an insertive partner		6	2.9
Anal sex as both a receptive and an insertive partner		22	10.5
Receiving oral sex		9	4.3
Giving oral sex		71	34
Vaginal sex as an insertive partner		1	0.5
Thigh sex		5	2.4
Number of clients/partners in the past week			
Mean	5.6		
Median	2		
SD	9.2		
Number of clients/partners in the past month			
Mean	15.4		
Median	5		
SD	28.5		

Table 2

Factors associated with selling sex among waria participating in a study in Jakarta

Associated variables		Selling sex			P value
		Primary income	Additional income	Not selling sex	
	209	75	51	83	
Age	M	27.9	29.9	32.3	.007*
	SD	8.9	6.8	9.3	
Number of clients/partners in the past week	M	11.5	4.7	1	.000**
	SD	12	6.7	1.3	
Number of clients/partners in the past month	M	31.1	14	2.2	.000**
	SD	39.1	20.7	4.4	
Level of education	206				.297
≤6 (Primary school)	%	32.7 (n=16)	18.4 (n=9)	49 (n=24)	
7-9 (Junior high school)	%	37.3 (n=22)	32.2 (n=19)	30.5 (n=18)	
≥10 (High school & Academy)	%	36.7 (n=36)	22.4 (n=22)	40,8 (n=40)	
Ethnic background of mother	209				.038**
Javanese	%	29.2 (n=21)	31.9 (n=23)	38,9 (n=28)	
Sundanese	%	46.2 (n=30)	24.6 (n=16)	29.2 (n=19)	
Others	%	33.3 (n=24)	16.7 (n=12)	50 (n=36)	
Religion	209				.622
Moslem	%	35.8 (n=68)	25.3 (n=48)	38.9 (n=74)	
Non-Moslem	%	36.8 (n=7)	15.8 (n=3)	47.4 (n=9)	
Duration living in Jakarta	209				.049**
≤5 years	%	35.3 (n=24)	39.2 (n=20)	35.3 (n=24)	
6-10 years	%	46.2 (n=18)	30.8 (n=12)	23.1 (n=9)	
>10 years	%	32,4 (n=33)	18.6 (n=19)	49 (n=50)	
Marital status	209				.016**
Unmarried	%	39 (n=73)	22.5 (n=42)	38.5 (n=72)	
Married/Ever married (Divorce & separate)	%	9.1 (n=2)	40.9 (n=9)	50 (n=11)	
With who lived in Jakarta	209				.323
Alone	%	35.1 (n=33)	28.7 (n=27)	23,4 (n=34)	.
Friends	%	34 (n=17)	14 (n=7)	52 (n=26)	
Family	%	32 (n=8)	24 (n=6)	44 (n=11)	
Regular partner (male/female)	%	42,5 (n=17)	27,5 (n=11)	30 (n=12)	
With who have sex currently	209				.463
Only men	%	35,3 (n=65)	23.4 (n=43)	41,3 (n=76)	
Mostly men	%	38.9 (n=7)	38.9 (n=7)	22.2 (n=4)	
Men and or women	%	42.9 (n=3)	14.3 (n=1)	42.9 (n=3)	

* Correlation is significant at the 0.01 level (2-tailed).
** Correlation is significant at the 0.05 level (2-tailed).

Table 3

Factors associated with the type of sex and condom use behavior

Associated variables		Type of sex				P value
		Receptive	Both receptive & insertive	Giving oral sex	Others	
Selling sex	209					.021**
Primary income	%	48 (n=36)	9.3 (n=7)	38.7 (n=29)	4 (n=3)	
Additional income	%	33.3 (n=17)	19.6 (n=10)	37.3 (n=19)	9.8 (n=5)	
Not selling sex	%	50.6 (n=42)	6 (n=5)	27.7 (n=23)	15.7 (n=13)	
		Always use condom during receptive anal sex				
Selling sex	165	**Yes**		**No**		.003**
Primary income	%	94.2 (n=65)		5.8 (n=4)		
Additional income	%	86 (n=37)		14 (n=6)		
Not selling sex	%	71.7 (n=38)		28.3 (n=15)		
		Always use condom during insertive anal sex				
Selling sex	80	**Yes**		**No**		.642
Primary income	%	81.8 (n=27)		18.2 (n=6)		
Additional income	%	82.8 (n=24)		17.2 (n=5)		
Not selling sex	%	(n.2 (n=13)		27.8 (n=5)		

* Correlation is significant at the 0.01 level (2-tailed).
** Correlation is significant at the 0.05 level (2-tailed).

Chapter

3

Preparatory Behaviors and Condom Use during Receptive and Insertive Anal Sex among Male-to-Female Transgenders (*Waria*) in Jakarta, Indonesia

Published as:
Prabawanti C., Dijkstra A., Riono P., Hartana Tb G. (2014). Preparatory behaviours and condom use during receptive and insertive anal sex among male-to-female transgenders (*Waria*) in Jakarta, Indonesia. Journal of the International AIDS Society, 17:19343.

Abstract

Introduction: The male-to-female transgender (*waria*) is part of a key population at higher risk for HIV infection. This study aims to test whether psychosocial determinants as defined by the theory of planned behaviour (TPB) can explain behaviours related to condom use among waria. Three preparatory behaviours (getting, carrying, and offering a condom) and two condom use behaviours (during receptive and insertive anal sex) were assessed.

Methods: The study involved 209 waria, recruited from five districts in Jakarta and interviewed by using structured questionnaires. Specific measures were developed to study attitudes, subjective norms and perceived behavioural control (PBC) in order to predict intentions and behaviours.

Results: The explained variance between intentions with regard to three preparatory behaviours and two condom uses ranged between 30 and 57%, and the variance between the actual preparatory behaviours of three preparatory and two condom uses ranged between 21 and 42%. In our study, as with several previous studies of the TPB on protection behaviours of HIV transmission, the TPB variables differed in their predictive power. With regard to intention, attitude and PBC were consistently significant predictors; attitude was the strongest predictor of intention for all three preparatory behaviours, and PBC was the strongest predictor of intention for condom use, both during receptive and insertive anal sex. TPB variables were also significantly related to the second parameter of future behaviour: actual (past) behaviour. TPB variables were differentially related to the five behaviours. Attitude was predictive in three behaviours, PBC in three behaviours and subjective norms in two behaviours.

Conclusions: Our results have implications for the development of interventions to target preparatory behaviours and condom use behaviours. Five behaviours and three psychological factors as defined in the TPB are to be targeted.

Keywords: Transgender; theory of planned behaviour; preparatory behaviours; condom use; HIV/AIDS; Indonesia.

Chapter 3.

Preparatory Behaviors and Condom Use during Receptive and Insertive Anal Sex among Male-to-Female Transgenders (*Waria*) in Jakarta, Indonesia

Introduction

Waria and Sexual Risk Behaviour

Waria is an Indonesian term for the male-to-female transgender. Because waria frequently practice anal sex in commercial and non-commercial settings, they are therefore identified as part of a key population at higher risk for HIV infection and other STIs (sexually transmitted infections). Waria are either (1) people who appear androgynous or behave androgynously or (2) biological males who cross-dress and/or adopt the behavioural and societal roles of females. The first definition of waria refers to androgynous gender behaviour and the second definition refers to a socially constructed identity (Oetomo, 1991). In short, waria refers to individuals whose gender expression and identity are in contrast with their biological sex.

Although the latest 2011 data showed that condom use among waria in Jakarta had increased to 59% (as compared to 15% in 2007) (Ministry of Health Republic of Indonesia, Ministry of Justice and Human Rights Republic of Indonesia, National AIDS Commission, GFATM, SUM1/USAID, Worldbank, 2011; Department of Health/Departemen Kesehatan Republic of Indonesia, Central Bureau Statistics/Badan Pusat Statistik Indonesia, United States Agency for International Development/USAID, National AIDS Commission/Komisi

Penanggulangan AIDS, Family Health International/ASA Program, 2007), the prevalence of HIV in Jakarta is still high; above 30% (Ministry of Health Republic of Indonesia, Ministry of Justice and Human Rights Republic of Indonesia, National AIDS Commission, GFATM, SUM1/USAID, Worldbank, 2011; Department of Health/Departemen Kesehatan Republic of Indonesia, Central Bureau Statistics/Badan Pusat Statistik Indonesia, United States Agency for International Development/USAID, National AIDS Commission/Komisi Penanggulangan AIDS, Family Health International/ASA Program, 2007). Thus, waria condom use seems still insufficient to decrease HIV transmission in this population. Indeed, several studies have estimated that a consistent condom use of 70-80% is needed during anal sex among male same-sex partners in order for it to be effective (Wilton, 2013). Therefore, it is important to further develop effective interventions that aim to increase condom use. Health promotion interventions can target the psychosocial determinants of condom use. However, at present very little is known about these psychosocial determinants in waria. This study aims to fill this gap by examining these psychosocial factors in waria.

In the present study, we examined condom use behaviours on the basis of the theory of planned behaviour (TPB). Given that this model has predicted health-related behaviours (Godin and Kok, 1996), including condom use behaviours [Albarracin, Johnson, Fishbein, & Muellerleile, 2001; Bennett & Bozionelos, 2000; Sheeran, Abraham, & Orbell, 1999; Sheeran & Taylor, 1999), we also expected it to help explain waria condom use during anal sex behaviours. The TPB postulates three conceptually independent determinants of intention. The first is the attitude towards the behaviour itself, whether favourable or unfavourable. The second predictor is subjective norms, the perceived social pressure to perform or not to perform the behaviour.

The third predictor of intention is the degree of perceived behavioural control (PBC): the extent to which people feel that they have control over performing the behaviour. PBC would include the perceived influence of both internal (e.g. self-efficacy, skills) and external (e.g. opportunities, constraints) factors and is assumed to reflect past experience as well as anticipated impediments and obstacles. The TPB predicts that the more favourable are people's attitudes and subjective norms with respect to a behaviour and the greater their PBC, the stronger will be their intention to perform the behaviour (Ajzen, 1991).

However, condom use is not only determined by these psychosocial factors. The concrete act of using a condom must be preceded by other behaviours, called ''preparatory behaviours'' (Sheeran, Abraham, & Orbell, 1999; Bryan, Fisher & Fisher, 2002; Van Empelen & Kok G, 2006). The three preparatory behaviours relevant to condom use are buying condoms, having them available, and discussing condom use with a sexual partner. Van Empelen and Kok (2008) suggested that interventions aimed at promoting condom use should not only focus on condom use itself but should also motivate and encourage buying and carrying condoms (Van Empelen & Kok, 2008). This conclusion underlines the important role of preparatory behaviours and how they affect condom use.

In this study, besides the three preparatory behaviours mentioned above, two condom use behaviours were investigated: the use of a condom by waria receiving anal sex (receptive anal sex) and the use of a condom by waria performing insertive anal sex. We also considered the behaviour of waria who, when receiving anal sex, encourage condom use by their sexual partners.

Objectives

The first aim of this study was to test whether the psychosocial determinants as defined by the TPB could explain three preparatory behaviours of condom use (getting, carrying and offering condoms) and two condom use behaviours (during receptive and insertive anal sex) among waria. For each of these behaviours, specific measures of attitude, subjective norms and PBC were developed. Since the study used a cross-sectional design with structured interviews among waria, no prospective data on actual behaviours were gathered. Therefore, the psychosocial determinants were related to two proxies of actual behaviour on the one hand, and on the other hand they were related to the intention and actually engaging in the specific behaviour in the past. The second aim of this study was, where possible, to conduct mediation tests to examine whether attitude and PBC mediate the relationships of subjective norms with intention and behavior.

Methods

Recruitment Procedure

In total, 210 waria were approached, of whom 209 were included in this study. These comprised almost 16% of the last estimated total of waria in Jakarta (Komisi Penanggulangan AIDS, 2006). Subjects were recruited using a sampling cluster procedure with the five municipalities in Jakarta as groups (Central, North, South, East and West), representing all residential locations of waria. We recruited participants in the Centre of Jakarta (n=23), East Jakarta (n=75), West Jakarta (n=45), South Jakarta (n=45) and North Jakarta (n=22) between September and October 2007. One participant from East Jakarta was excluded from this study due to a serious language barrier.

Waria often live in small groups, coordinated by a ringleader or mami. A mami is usually a senior waria who provides support for the 5-15 waria in her group, including

violence protection and promotion of condom use, uptake of HIV testing and regular STI check-ups (Prabawanti et al., 2011). The Srikandi Sejati Foundation, the waria organization in Jakarta, provided a list of waria living in all five districts, and the mamis were asked to approach those present and available for inclusion in our study at the time of data collection.

Interview Procedure

The present study was part of a broader study covering a range of behaviours related to condom use and HIV-related health-seeking behaviours. It was approved by the Ethical Committee Psychology at the University of Groningen, the Netherlands. This article only provides data on three preparatory and two condom use behaviours. The interviews were structured and conducted face-to-face. The interview first assessed demographic variables, sexual history and sexual practices. It then assessed five behaviours relevant to condom use, asking the participants about their preparatory behaviours (getting, carrying and offering condoms) and condom use behaviours (during receptive and insertive anal sex). The interviews took 45-60 minutes.

Five interviewers, including the first author, were involved in the data collection. Informed consent was prepared at two levels. First, permission was granted by the mamis as the coordinators and leaders of the waria in each district. This permission was given after a meeting with all mamis to explain the purpose of the study and the possibility of refusing participation. Second, the interviewers introduced themselves to the respondents and informed them about the purpose of the study. Respondents were told that participation was voluntary and that they could withdraw at any time without citing a reason. The respondents were then asked whether they had understood the information and were willing to participate. The actual interviews were conducted after

individuals had given verbal consent. For respondents under 18 years of age, verbal consent was given by the mami as the person responsible for each group. Unwritten, informed consent was chosen for this study to assure the anonymity and confidentiality of the respondents. Interviews were conducted at different venues; using the networks of the mamis, we found quiet places or separate rooms to conduct the interviews. Most of the interviews were conducted in waria bedrooms, some in the salons and the rest in the Primary Health Centre or in mamis' living rooms.

Questionnaire

Background characteristics. Socio-demographics included age, educational level and marital status. Sexual behaviour was assessed by means of several questions (not presented). The central part of the questionnaire was based on the application of the TPB to preparatory behaviours and condom use by waria during anal sex. The primary focus was on the three preparatory behaviours of getting, carrying and offering condoms, and the two condom use behaviours (i.e. condom use during receptive or insertive anal sex). With regard to all five behaviours, we assessed attitudes, social norms, PBC, behavioural intentions and actual (past) behaviour.

Attitudes. Attitudes were assessed by means of a 7-point semantic differential scale (inconvenient-fun; harmful-beneficial; boring-exciting; something that can be overlooked-a must; foolish-wise). The items for each behaviour included the following: ''Getting condoms is . . .''; ''Carrying condoms when I am going to have sex is . . .''; ''Offering a condom when we are going to have sex is . . .''; ''Always using a condom when I have receptive anal sex is . . .''; ''Always using a condom when I have insertive anal sex is ...'' Concerning each behavior separately, the average item score was computed as the scale score: the higher the score, the more positive the attitude

towards the specific behaviour. The Cronbach's alpha of the five scales ranged from 0.84 to 0.90.

Subjective norms. The format of the subjective norms measurement with regard to all five behaviours was ''According to the following people, I should or should not always [engage in the specific behaviour].'' The short list of people included the regular partner, regular clients, non-regular clients, friends, ''mamasan'' and outreach workers. Scales ranged from ''should not'' (1) to ''should'' (7). For each separate behaviour, the average item score was computed as the scale score: the higher the score, the more positive the subjective norms regarding the specific behaviour. The Cronbach's alpha of the five scales ranged from 0.81 to 0.86.

Perceived behavioural control. PBC was assessed using three items. One item assessed the perceived difficulty of each behaviour by means of a 7-point scale: (1) very difficult, difficult, somewhat difficult, not easy, somewhat easy, easy and (7) very easy. An example of an item is: ''In the next month, will it be easy or difficult for you to get condoms?'' The second and third items assessed how certain it was that respondents would be able to engage in the behaviour. Examples are: ''In the next month, how sure are you that you can offer a condom whenever you are going to have sex?'' and ''In the next month, if I want to, I am sure that I will always be able to use a condom when I have insertive anal sex.'' Concerning each behaviour separately, the score of the average item was computed as the scale score: the higher the score, the easier it was perceived to be to engage in the specific behaviour. The Cronbach's alpha of the five scales ranged from 0.72 to 0.88.

Behavioural intentions. Behavioural intentions were assessed as follows: ''In the next month, do you intend to [engage in the specific behaviour]?'' Answer categories

ranged from (1) never, to seldom, sometimes, regularly, often, very often and (7) always.

Past behavior. The five behaviours were assessed with the following items: ‘‘In the past month, . . . did you try to get condoms?’’; ‘‘. . . did you carry condoms when you were going to have sex?’’; ‘‘. . . did you offer a condom when you were going to have sex?’’; ‘‘. . . did your clients/partners use a condom when you had receptive anal sex?’’; ‘‘. . . did you use a condom when you had insertive anal sex?’’ Answer categories ranged from (1) never, to seldom, sometimes, regularly, often, very often and (7) always.

Data Analysis

The aim was to relate the three TPB variables (independent variables/IVs) to the condom-use-related variables (dependent variables/DVs) using linear regression analyses. No covariates were included in these analyses. Two proxies of the actual behaviours were regressed on the TPB variables: intention to engage in each of the five behaviours, and past frequencies of engaging in each of the five behaviours. The five behaviours were the three preparatory behaviours: getting, carrying and offering condoms, and the two condom use behaviours: condom use during receptive or insertive anal sex. In sum, a total of 10 regression analyses were conducted (five for each proxy). Before conducting the analysis summary, statistics were generated to evaluate the distributions of variables. The residuals of the IVs and DVs were distributed normally, meeting the statistical assumptions. Below we report for each model, first on the explained variance and F-statistics of the total regression model, and second on the b and its related t-test of each of the three TPB variables in the model. Table 1 summarizes these statistics and presents the means and standard deviations of each TPB variable with regard to specific intentions and past behaviours.

To test for mediation effects, we used Preacher and Hayes' SPSS Macro PROCESS (version 17). Because this is a fairly novel method, it will be presented here in some detail. PROCESS has been described by Preacher and Hayes (Preacher & Hayes, 2008) as a method for testing multiple mediators. This procedure yields unstandardized path coefficients for a multiple mediator model and estimates 95% confidence intervals (CI) of the indirect (= mediated) effects using a bootstrapping sample procedure. Assessing an indirect effect by means of a bootstrapping sample procedure is more reliable than testing the significance of the mediation effects, because the sampling distribution of the indirect effects is normal only for large samples. The mediation analysis used here followed the product of coefficients approach, and thus focused on indirect effects rather than individual paths (Preacher & Hayes, 2008).

The mediate test was used here to examine whether the relations between subjective norms (independent variables, or IV) and intention (dependent variables, or DV) and between subjective norms (IV) and behaviour (DV) were mediated by attitude and PBC. The results below indicate a mediation when the CI of the indirect path by a 95% bias corrected bootstrap (based on 5000 bootstrap samples) does not contain zero.

Results

Descriptive Analyses

In total, 209 waria took part in the study. The participants' mean age was 30 years (ranging from 15 to 67); 23% had been in primary school, 28% had been in school levels 7 to 9, almost 42% had a higher education level and 5% had studied at a university. Most waria were unmarried (89.5%), 5% were married and 5.8% were divorced or separated.

Of the 209 waria, 88% currently only had sex with men, 66% reported selling sex and had had clients in the past week. Regarding the question about the type of sex they

‘‘most often’’ engaged in, almost half of the waria indicated receptive anal sex (45.5%), 2.9% indicated insertive anal sex, 10.5% indicated both types of anal sex, while 34% indicated they most often gave oral sex. Few waria indicated receiving oral sex (4.3%), having vaginal sex (0.5%) or having thigh sex (2.4%).

Predicting Preparatory and Condom Use Behaviours

Below we report for each model, first on the explained variance and F-statistics of the total regression model, and second on the b and its related t-test of each of three TPB variables. Table 1 summarizes these statistics and presents the means and standard deviations of each of the three TPB variables with regard to specific intentions and past behaviours.

Getting Condoms

Intention. The regression model including the three IVs explained 30% of the variance in intention to get condoms, F (3, 146) = 20.63, $p < 0.001$. All three IVs were significantly related to intention: attitude ($\beta = 0.37$, $p < 0.001$), subjective norms ($\beta = 0.22$, $p < 0.005$) and PBC ($\beta = 0.15$, $p < 0.05$).

Behaviour. The regression model including the three IVs explained 21% of the variance in behaviour to get condoms, F (3, 144) = 12.45, $p < 0.001$. Among these three IVs, two were significantly related to behaviour: attitude ($\beta = 0.37$, $p < 0.001$) and subjective norms ($\beta = 0.21$, $p < 0.01$).

Carrying Condoms

Intention. The regression model including the three IVs explained 52% of the variance in intention to carry condoms, F (3, 145) = 53.08, $p < 0.001$. Among these three

IVs, two were significantly related to intention: attitude (β = 0.48, p < 0.001) and PBC (β = 0.34, p < 0.001).

Behaviour. The regression model including the three IVs explained 28% of the variance in the behaviour of carrying condoms, F (3, 145) = 19.09, p < 0.001. Among these three IVs, two were significantly related to behaviour: attitude (β = 0.24, p < 0.05) and PBC (β = 0.29, p < 0.01).

Offering a Condom

Intention. The regression model including the three IVs explained 51% of the variance in intention to offer a condom, F (3, 145) = 49.89, p < 0.001. Among these three IVs, two were significantly related to intention: attitude (β = 0.48, p < 0.001) and PBC (β = 0.30, p < 0.001).

Behaviour. The regression model including the three IVs explained 42% of the variance in behaviour of offering a condom, F (3, 146) = 34.73, p < 0.001. Among these three IVs, two were significantly related to behaviour: attitude (β = 0.40, p < 0.001) and subjective norms (β = 0.26, p < 0.001).

Using Condoms during Receptive Anal Sex

Intention. The regression model including the three IVs explained 50% of the variance in intention to use a condom in receptive anal sex, F (3, 128) = 42.83, p < 0.001. Two IVs were significantly related to intention: attitude (β = 0.29, p < 0.001) and PBC (β = 0.46, p < 0.001).

Behaviour. The regression model including the three IVs explained 22% of the variance in the behaviour of using a condom during receptive anal sex, F (3, 109) = 10.17, p < 0.001. Among these three IVs, two were significantly related to behaviour: subjective norms (β = 0.21, p < 0.05) and PBC (β = 0.29, p < 0.01).

Using Condoms during Insertive Anal Sex

Intention. The regression model including the three IVs explained 57% of the variance in intention to use a condom during insertive anal sex, F (3, 129) = 55.81, p < 0.001. Two IVs were significantly related to intention: attitude (β = 0.27, p < 0.01) and PBC (β = 0.50, p < 0.001).

Behaviour. The regression model including the three IVs explained 32% of the variance in the behaviour of using a condom during insertive anal sex, F (3, 58) = 9.25, p < 0.001. Among these three IVs, only PBC was related significantly to behavior (β = 0.52; p < 0.001).

Mediation Testing for Subjective Norms

The findings of the multivariate analyses showed that subjective norms were not related to four intentions and two behaviours. However, in the univariate analyses, all these relations were significant (correlations ranged from 0.32 to 0.52; p < 0.05). The findings in the multivariate analyses may have resulted from the relationship of subjective norms with intention and behaviour being mediated by attitude and PBC. Therefore, we used Hayes' mediate test (Hayes, 2009) to examine these relations more closely.

Testing the Mediation of Subjective Norms related to Intention

Simple mediation models (indirect effects) for the intention to carry a condom, the intention to offer a condom, the intention to use a condom during receptive anal sex and the intention to use a condom during insertive anal sex are summarized in Table 2. The indirect effect paths showed that the relationship between subjective norms and intentions with regard to all four behaviours were significantly mediated by attitude as well as by PBC. Since there were more than one mediator, the model is called a single-step multiple mediators model (see Figure 1), in which the total effect of the model (the relationship between subjective norms and intentions is symbolized by *c*) is equal to the direct effect of subjective norms on intention (symbolized by *c1*) plus the sum of the indirect effect of attitude (*a1b1*) and the indirect effect of PBC (*a2b2*). That is, $c=c'+a1b1+a2b2$.

The total effects of subjective norms on all four intentions were significant: intention to carry a condom: $c = 0.116$, $p < 0.001$; intention to offer a condom, $c = 0.175$, $p < 0.001$; intention to use a condom during receptive anal sex, $c = 0.190$, $p < 0.001$; intention to use a condom during insertive anal sex, $c = 0.218$, $p < 0.001$.

Testing the Mediation of Subjective Norms related to Behaviour

Simple mediation models (indirect effects) for the behavior of carrying condoms and use of condoms during insertive anal sex are summarized in Table 2.The indirect effects showed that the relationships of subjective norms with the behavior of carrying condoms were significantly mediated by attitude as well as by PBC. With regard to use of a condom during insertive anal sex, the indirect paths showed that only PBC mediated the relationship of subjective norms and behaviour.

The total effect of subjective norms on the behaviour of carrying a condom was significant, $c = 0.086$, $p < 0.001$, and the total effect of subjective norms on the behaviour of using a condom during insertive anal sex was significant, $c = 0.120$, $p < 0.05$.

Discussion

To date, no published data are available on the TPB variables in predicting condom use among waria. This cross-sectional study showed the relevance of TPB in explaining preparatory behaviours and condom use by looking at psychosocial factors. Such knowledge of these determinants of behavior is essential for systematically developing interventions to promote condom use in the target group in order to prevent HIV transmission (Aarts, Verplanken & Van Knippenberg, 1998).

In accordance with several previous studies of the TPB on protection behaviours of HIV transmission, the TPB variables differed in their predictive power. With regard to intention, attitude and PBC were consistently significant predictors; attitude was the strongest predictor of intention for all three preparatory behaviours, and PBC was the strongest predictor of intention for condom use, either during receptive or insertive anal sex. The explained variance in intention ranged from 30 up to 57% (Table 1). In earlier studies, the TPB variables explained variance in intention of condom use ranging from 17 to 69% (Sheeran & Taylor, 1999). The explained variance in intention in this study was thus in line with earlier studies.

The TPB variables were differentially related to the five behaviours. Attitude was associated with three behaviours, PBC with three behaviours and subjective norms with two behaviours. The explained variance in behaviour ranged between 21 and 42% (Table 1). A review of 26 studies showed that the overall average explained variance in behaviour was 34%, varying from 15.6% (clinical and screening behaviours) to 42.3% (HIV-related behaviours) (Godin & Kok, 1996). Thus, the explained variances of behaviour in this study span within the range of explained variances in earlier studies.

The 'Room' for commercial sex transaction in Central Jakarta

Regarding TPB determinants, and particularly with regard to predicting intentions, it seemed at first that subjective norms were less important. However, mediation tests revealed that the relationship between subjective norms and intentions was completely mediated by attitude and PBC in four of the five behaviours. In two of the five behaviours, the relationship between subjective norms and past behavior was

completely mediated by one or both of the other determinants. Psychologically, these data suggest that subjective norms may contribute to the development of attitudes and PBC.

Prior to concluding the implications of the current study for HIV-infection prevention interventions, several limitations need to be mentioned. First of all, as this study was cross-sectional, we do not predict intention and behaviour. Rather, we do present these DVs in our study as the best predictors of future behaviour (Ajzen 1991; Bartholomew & Mullen, 2011). Second, a structured face-to-face interview was conducted to roll out the survey. This method was chosen with great care to cover the variance in literacy levels of the participants, which ranged from very low or illiterate to very high. However, the interview format may have resulted in socially desirable answers or interviewer biases (Dare & Cleland, 1994). In addition, explanations and different wordings of questions to adjust to the literacy levels of participants may have lowered the standardization of the interview, thereby threatening its internal validity. An attempt was made to minimize these potential drawbacks by providing a structured questionnaire and by training all the interviewers to standardize the question delivery as much as possible.

Conclusions

Our current results have implications for the development of prevention interventions to promote preparatory and condom use behaviours in the waria population. First, all three preparatory behaviours (i.e. getting, carrying and offering condoms) and the two condom use behaviours (i.e. during receptive and insertive anal sex) should be targeted. Previous studies found that preparation, specifically for condom use, is an important prerequisite for safer sex (Bryan, Fisher & Fisher, 2002; Van

Empelen & Kok, 2006). Second, our study suggests that prevention interventions should target all three psychological factors defined in the TPB (i.e. attitude, subjective norms and PBC).

When it comes to attitudes, the present study shows that there is still substantial variance; not all waria have positive attitudes towards condom use. Attitudes are formed on the basis of knowledge and beliefs as to the consequences of one's behaviour. Waria must, therefore, be continuously educated about the risks of unsafe sex. This can be done by using well-designed and targeted educational materials, including posters and leaflets, but also by asking the mamis to warn their waria.

Trying to change attitudes may, however, not be sufficient. For example, our study showed that with regard to all five behaviours, PBC is related to intention. We might therefore consider targeting PBC. A person's PBC is influenced by barriers they experience with regard to engaging in a specific behaviour; the removal of such barriers could make positive behaviour easier; this could be facilitated by intervention components. For example, to strengthen a waria intention to get condoms, policies and resources could be developed to make condoms available and visible in locations where they are really needed (i.e. locations commonly used for hanging out or commercial sex settings such as parks, railway stations or along the roads). Support of such policies is critical to assure continuity. The PBC of waria might also be influenced by teaching them the necessary skills of negotiating condom use and actually putting on a condom. Making these potentially difficult tasks easier could empower waria and increase their self-efficacy.

Besides attitudes and PBC, subjective norms should also be targeted. Based on a narrow conceptualization of subjective norms as a psychological factor, interventions might aim to convince waria that there is a broad consensus on what people think that

they should do. The prevention intervention in itself could not only provide waria with condoms but also send the message that the use of condoms is socially desired. Based on a broader conceptualization of subjective norms, interventions might also target the social environment to create a solid supportive network to encourage condom use behaviours; local stakeholders, gate keepers, community and religious leaders would at least need to be positive about condom use as prevention for HIV transmission.

To conclude, face-to-face interviews with over 200 waria provided unique data on the psychology behind their condom use. These data form a valuable background for the development of effective preventive interventions to control the spread of HIV transmission among waria and to promote their health.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.

Albarracin, D., Johnson, B.T., Fishbein, M., & Muellerleile, P.A. (2001). Theories of reasoned action and planned behavior as models of condom use: a meta analysis. *Psychological Bulletin*, 127(1), 142-61.

Aarts, H., Verplanken, B., & Van Knippenberg, A. (1998). Predicting behavior from action in the past: repeated decision making or a matter of habit? *Journal of Applied Social Psychology*, 28(15), 1355-1374.

Bartholomew, L.K & Mullen, P.D. (2011). Five roles for using theory and evidence in the design and testing of behavior change interventions. *Journal of Public Health Dentistry*, 71, S20-33.

Bennett, P & Bozionelos, G. (2000). The theory of planned behavior as predictor of condom use: a narrative review. *Psychology, Health & Medicine*, 5(3), 307-26.

Bryan, A.D., Fisher, J.D, & Fisher, W.A. (2002). Test of the mediational role of preparatory safer sexual behaviour in the context of the theory of planned behavior. *Health Psychology*, 21(1), 71-80.

Dare, O.O & Cleland, J.G. (1994). Reliability and validity of survey data on sexual behavior. *Health Transition Review*, Suppl 4, 93-110.

Department of Health/Departemen Kesehatan Republic of Indonesia,

Central Bureau Statistics/Badan Pusat Statistik Indonesia, United States Agency for International Development/USAID, National AIDS Commission/Komisi

Penanggulangan AIDS, Family Health International/ASA Program. (2007). Integrated biological behavioral surveillance among most at risk group in Indonesia 2007, Surveillance Highlights: Waria.

Godin, G & Kok, G. (1996). The theory of planned behaviour: a review of its applications to health-related behaviours. *American Journal of Health Promotion*, 11(2), 87-98.

Hayes, A.F. (2009). Beyond Baron and Kenny: statistical mediation analysis in the new millennium. *Communication Monographs*, 76(4), 408-420.

Komisi Penanggulangan AIDS. (2006). Laporan nasional kegiatan estimasi populasi dewasa rawan terinfeksi HIV tahun 2006 [National report of estimates of adult population vulnerable to HIV infection year 2006]. Indonesia: Komisi Penanggulangan AIDS.

Ministry of Health Republic of Indonesia, Ministry of Justice and Human Rights Republic of Indonesia, National AIDS Commission, GFATM, SUM1/USAID, Worldbank. (2011). Survei terpadu biologis dan perilaku pada kelompok berisiko tinggi di Indonesia 2011. Lembar Fakta: Waria [Integrated biologica and behavioural survey among most at risk population in Indonesia 2011. Fact sheet: Waria]. Indonesia.

Oetomo, D. (1991). Patterns of bisexuality in Indonesia. In: Tielman R, Carballo M,Hendriks A, editors. *Bisexuality and HIV/AIDS*. New York: Promotheus, 119-126.

Prabawanti C., Bollen L., Palupy R., Morineau G., Girault P., Mustikawati, D.E., Nurholis, M., Nurhayati., Aditya, E. R., Anartati, A. S., & Magnani, R. (2011). HIV, sexually transmitted infections, and sexual risk behavior among transgenders in Indonesia. *AIDS and Behavior*, 15, 665-673.

Preacher, K.J & Hayes, A.F. (2008). Asymptomatic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behaviour Research Methods*, 40(3), 879-891.

Sheeran, P., Abraham, C., & Orbell, S. (1999). Psychosocial correlates of heterosexual condom use: a meta-analysis. *Psychological Bulletin*, 125(1), 90-132.

Sheeran, P & Taylor, S. (1999). Predicting intentions to use condoms: a meta-analyses and comparison of the theories of reasoned action and planned behavior. *Journal of Applied Social Psychology*, 29(8),1624-75.

Van Empelen, P & Kok, G. (2006). Condom use in steady and casual sexual relationships: planning, preparation and willingness to take risks among adolescents. *Psychology & Health*, 21(2), 165-81.

Van Empelen, P & Kok, G. (2008). Action-specific cognitions of planned and preparatory behaviors of condom use among Dutch adolescents. *Archives of Sexual Behaviour*, 37, 626-40.

Wilton, J. (2013, cited 2014 May 18). Condoms: tried, tested, and true? In: Canadian AIDS treatment information exchange. Spring [Internet]. Retrieved from: http://www.thebodypro.com/content/70694/condoms-tried-tested-andtrue. Html.

Tables

Table 1

Regression analyses of preparatory behaviour, behaviour intention and behaviour of condom use during receptive and insertive anal sex

Variable	Intention				Behavior			
	M	SD	β	R^2	M	SD	β	R^2
Getting condom	6.20	1.40			4.57	2.15		
Attitude toward getting condom	31.19	4.88	0.37***	0.30	31.26	4.84	0.37***	0.21
Subjective norms regarding getting condom	27.80	6.09	0.22**		27.95	5.93	0.21**	
Perceived behavioral control regarding getting condom	17.35	3.27	0.15*		17.34	3.29	-0.03	
Carrying condom	12.97	2.08			6.11	1.63		
Attitude toward carrying condom	32.94	3.56	0.48***	0.52	32.94	3.56	0.24*	0.28
Subjective norms regarding carrying condom	28.56	6.44	0.01		28.56	6.44	0.13	
Perceived behavioral control regarding carrying condom	18.75	2.89	0.34***		18.75	2.89	0.29**	
Offering condom	12.02	2.93			5.43	2.04		
Attitude toward offering condom	31.01	5.76	0.48***	0.51	31.03	5.75	0.40***	0.42
Subjective norms regarding offering condom	28.29	6.01	0.06		28.30	5.99	0.26***	
Perceived behavioral control regarding carrying condom	17.17	3.45	0.30***		17.19	3.45	0.14	
Using condom during receptive anal sex	11.93	2.71			4.88	2.14		

Attitude toward using condom during receptive anal sex	38.52	5.37	0.29***	0.50	38.58	4.74	0.09	0.22
Subjective norms regarding use of condom during receptive anal sex	28.36	6.23	0.08		28.63	5.71	0.21*	
Perceived behavioral control regarding use of condom during receptive anal sex	17.68	3.40	0.46***		17.89	3.01	0.29**	
Using condom during insertive anal sex	12.17	2.88			4.90	2.42		
Attitude toward use of condom during insertive anal sex	38.32	6.27	0.27**	0.57	39.23	4.36	-0.02	0.32
Subjective norms regarding use of condom during insertive anal sex	28.14	6.97	0.08		28.47	6.83	0.12	
Perceived behavioral control of use of condom during insertive anal sex	17.91	3.52	0.50***		18.15	3.10	0.52***	

PBC = perceived behavioural control.

The M of the three determinants are the means of the individual item sum scores.

*$p < .05$, **$p < .01$, ***$p < .001$

Table 2

Indirect relationships of subjective norms with intention and behavior, mediated by attitude and perceived behavioral control

	Point estimate	SE (boot)	Bootstrapping BC 95% CI	
			Lower	Upper
Intention to carry condom				
Attitude	0.0760	0.0257	0.0344	0.1393*
Perceived behavioral control	0.0369	0.0198	0.0103	0.0890*
Intention to offer condom				
Attitude	0.0765	0.0268	0.0341	0.1403*
Perceived behavioral control	0.0683	0.0285	0.0256	0.1415*
Intention to use condom during receptive anal sex				
Attitude	0.0581	0.0303	0.0137	0.1312*
Perceived behavioral control	0.0975	0.0332	0.437	0.1750*
Intention to use condom during insertive anal sex				
Attitude	0.0624	0.0388	0.0104	0.1582*
Perceived behavioral control	0.1233	0.0378	0.0558	0.2028*
Behavior to carry condom				
Attitude	0.0294	0.0141	0.0052	0.0612*
Perceived behavioral control	0.0247	0.0141	0.0067	0.0635*
Behavior to use condom during insertive anal sex				
Attitude	- 0.0044	0.0291	- 0.0884	0.0365
Perceived behavioral control	0.0838	0.0416	0.0243	0.2025*

PBC = perceived behavioural control.

*significant mediation

Figure

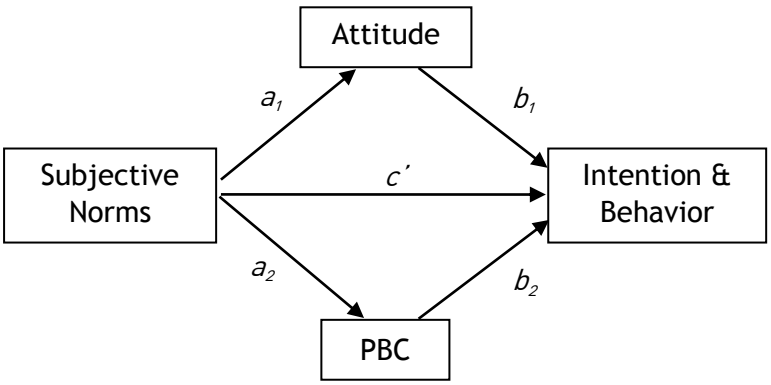

Figure 1. A single-step multiple mediator model

Chapter

4

A Survey on HIV-related Health-seeking Behaviors among Transgender Individuals in Jakarta, Based on the Theory of Planned Behavior

Prabawanti C., Dijkstra A., Riono P., Hartana G. (2015). A survey on HIV-related health-seeking behaviors among transgender individuals in Jakarta, based on the theory of planned behavior. BMC Public Health 2015, 15:1138, DOI: 10.1186/s12889-015-2480-0.

Abstract

Background. Male-to-female transgender (waria) individuals are at high risk for HIV. This study aims at mapping the psychological determinants of four HIV-related health-seeking behaviors. This knowledge can be used to develop effective interventions to prevent the spread of HIV/AIDS.

Methods. The study involved 209 waria from five districts in Jakarta, selected with a cluster sampling procedure. Cross-sectional data were gathered through structured interviews. The four examined behaviors are, visiting sexually transmitted infections (STIs) services regularly, adherence to STI treatment, taking an HIV test and picking up the result of HIV test. For all four behaviors, specific measures of the psychological determinants as defined by the Theory of Planned Behavior were developed: attitudes, subjective norms and perceived behavioral control (PBC). Logistic regression analyses were conducted with these three psychological measures as independent variables and the behaviors as dependent variables.

Results. Of the 209 waria, 20.6 % had never visited STI services in the last 6 months, while 56.5 % had visited the services once or twice, and 23 % had visited the service three or more times. A HIV test had been taken by 90.4 % of the waria, and of those, 64.6 % had picked up the results. About 85 % of the waria who did a HIV test had been tested for HIV one or two times in the last 6 months and 10 % had been tested three to four times. The variance in behaviors that was explained by the concepts defined in the Theory of Planned Behavior ranged from 15 to 70 %; PBC was the most powerful predictor. Furthermore, the results showed that in several cases the relationships of

attitudes or subjective norms with the dependent variable were mediated by one or both other independent variables.

Conclusion. The results regarding the prominent role of PBC suggest that interventions should increase waria's control over the behavior: Engaging in specific desired behaviors should be made easier for them. Besides, waria's attitudes and subjective norms should be addressed, by education, but possibly also by providing waria with a positive experience with the behavior, for example, by designing a professional and friendly health care system.

Keywords: Jakarta-Indonesia, transgender, health-seeking behavior, STI services, HIV test, Theory of Planned Behavior

Chapter 4.

A Survey on HIV-related Health-seeking Behaviors among Transgender Individuals in Jakarta, Based on the Theory of Planned Behavior

Background

Male-to-female transgender (waria) individuals are among the key affected populations in Indonesia, vulnerable to HIV and other sexually transmitted infections (STIs) because they often practice unprotected anal sex [1–3]. The Integrated Biological and Behavioral Survey (IBBS) among key affected populations in 2011 reported a prevalence of syphilis of 31 % (from 25.2 % in 2004) and of rectal gonorrhea and/or chlamydia of 38 % (from 42.1 % in 2004) in this group. The overall HIV prevalence among waria in five cities (Jakarta, Surabaya, Bandung, Semarang and Malang) in Indonesia was 22 %; it was the highest (31 %) in Jakarta [4, 5], while HIV prevalence in the general population in Indonesia is 0.33 % [6]. In addition, as previous studies indicated, an increase in STI may result in an increased risk of HIV transmission [3, 7]. For this reason, it is essential to integrate STI control programs into HIV risk reduction strategies.

Since the emergence of HIV in the 1980s, STI control efforts have been increasingly defined in relation to HIV program priorities. STI services have been integrated with HIV test as a package of services. This package aims to provide rapid and effective treatment to patients – either symptomatic or asymptomatic – to break the chain of infection and shorten the duration of infectivity. HIV test aims to detect HIV-positive

people as early as possible, in order to avoid missed opportunities of accessing appropriate treatment and prevent transmission as a result of unknown HIV infection status. The package – STI services and HIV tests – has been selected as the first gate to access HIV-related services. The World Health Organization (WHO) stated that early HIV testing and counseling of STI patients, detection of acute HIV infection, and regular STI screening and treatment are promising interventions [8].

As shown in the latest IBBS 2011, the prevalence of HIV among waria in Jakarta is above 30 % [4]. Thus, it would be appropriate to aim to decrease HIV transmission by targeting waria as one of the key affected populations: The most cost-effective way of controlling the spread of STIs is exposing key affected populations to effective interventions. That is, the prevention efforts that effectively reduce transmission in the "core" population - whose members usually have many partners - are important and often sufficient to reduce transmission in the population at large [8]. For this reason, it is important to examine waria's behaviors with regard to HIV-related health-seeking behaviors. In this study, we address four relevant behaviors.

The first relevant behavior is visiting STI services regularly. This means that waria commit themselves to visiting an STI clinic on a regular basis as part of an STI screening program. The guideline released by the Ministry of Health of the Republic of Indonesia (MOH RI) in 2011 recommends that the key affected populations, including people who frequently practice unprotected sexual behaviors, should visit STI services at least four times a year or on a monthly basis for the best results [9]. The second relevant behavior is taking an HIV test. Waria are strongly encouraged to take an HIV test during the window period, which means at least once in every 3–6 months [10]. The third relevant behavior is picking up the test result. That is, after having completed HIV test, patients should pick up the result, enabling them to access follow-up services such as a post-test

counseling and necessary treatment. The fourth relevant behavior is treatment adherence. The patients who have attended STI services and have been diagnosed with STI should adhere to the medical prescription regarding the dose and duration of use. However, in many cases the patients do not adhere to the STI treatment [11].

The effectiveness of screening and treatments regarding HIV largely depend on waria's behavior. When prevention interventions would accomplish to influence waria's behavior in the desired direction, this would very probably reduce the spread of HIV. To be able to develop effective prevention interventions, it is important to have insight into the psychological determinants of the above four health-related behaviors.

One of the most recognized theories to understand health behaviors is the theory of planned behavior (TPB). The TPB postulates three conceptually independent determinants behavior. The first is the attitude toward the behavior; the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question. The second determinant is psycho-social factor termed subjective norms; the perceived social pressure to perform or not to perform the behavior. The third determinant is the degree of perceived behavioral control (PBC); the perceived ease or difficulty of performing the behavior. The TPB predicts that the more favorable the attitude and subjective norms with respect to a behavior are, and the greater the PBC is, the stronger an individual's intention to perform the behavior, and the higher the chance that the actual behavior will be performed [12]. In a review of the application of TPB to health-related behaviors, the TPB was able to explain a substantial proportion of variance in intention and future behavior, although the efficiency of the theory varied between health-related behavior categories: The average explained variance in intention was 40.9 %, varying from 32 % (eating behavior) to 46.8 % (oral hygiene

behaviors). The average explained variance in behavior was 34 %, varying from 15.6 % (clinical and screening behaviors) to 42.3 % (HIV/AIDS-related behaviors) [13].

Nevertheless, there is a gap in the literature regarding understanding of people's health-seeking behaviors in relation to STI. One of the few studies we found was an exploratory study applying TPB on stigma, STI and attendance to a Genito-Urinary Medicine (GUM) clinic in a close-knit community in the north of England [14]. Furthermore, a meta-analytic study on predicting intentions and attendance at screening programs using the Theory of Reasoned Action (TRA) identified 33 studies (e.g., cervical smear, genetic test, colorectal screen, mammogram, diabetes, TB screening, prenatal screening and health check) [15]. Thus, there are studies reported on health-seeking behavior that apply TPB, but very few are on STI screening and none on STI screening among waria [13–16].

With regard to behaviors related specifically to HIV testing, a few previous studies showed the applicability of the TPB. One study addressed the intended use of voluntary HIV test services [16]. The analyses indicated that the PBC and attitude towards using HIV test services were significant predictors of intention to use HIV test services, explaining 30 % of variance in the behavior. Another study reported psychological factors in association with the uptake of HIV tests among men who have sex with men in Hongkong [17]. This study indicated that the TPB variables were significantly associated with both lifetime and 12-month uptake of HIV tests.

Although all three determinants in the TPB have been found to be related to behavior, the TPB variables show differences in the proportions of the variance in specific behaviors they explain. For example, subjective norm was not related to several behaviors [18]. This would mean that interventions do not have to target subjective norms to influence behavior. However, an alternative explanation is that subjective

norms have an indirect relation with the behavior; it might influence behavior through its influence on attitude and PBC. In such a case of mediation, interventions should also target subjective norms. Therefore, in the present study, we will test for possible mediation effects.

The first aim of this study was to examine the relationships of the TPB variables (i.e., attitude, subjective norms, PBC) with HIV-related health-seeking behaviors (visiting STI services regularly, adherence to STI treatment, taking an HIV test and picking up the result of the HIV test). On the basis of the TPB we hypothesized that specific measures of attitude, subjective norms and PBC would be related to each of the four health-seeking behaviors.

The second aim of this study was, when possible, to conduct mediation tests to examine whether subjective norms and PBC mediate the relationships of attitude with behavior, and whether attitude and PBC mediate the relationships of subjective norms with behavior. By increasing insight into the determinants of these behaviors, we hope to contribute to the development of effective interventions to fight the spread of HIV.

Methods

Recruitment Procedure

We used maps from the transgender organization in Jakarta (Yayasan Srikandi Sejati) to select the sites of the study. The waria in this study were recruited using a cluster sampling procedure with the five municipalities in Jakarta as groups (Central, North, South, East and West), representing all residential locations of waria. In total, we recruited 210 participants from the Center of Jakarta (n = 23), East Jakarta (n = 75), West Jakarta (n = 45), South Jakarta (n = 45), and North Jakarta (n = 22) between

September and October 2007. To gather information, interviews were conducted during the day, starting about 12 pm (in the afternoon) to 6–7 pm (in the evening). This seemed the best time for conducting interviews in waria, as they were still sleeping in the morning and they were starting to dress up and go out to the park, railway station and other places to meet the clients. The inclusion criteria were the following: Being identified as a transgender by mamis, living in one of the five selected districts in Jakarta, be able to speak and understand Bahasa Indonesia, and participate voluntarily in the study. One participant from East Jakarta was excluded from this study due to a serious language barrier. Therefore 209 waria participated, comprising almost 16 % of the last total estimated number of waria in Jakarta [19].

Waria usually migrate from rural areas to big cities like Jakarta. Upon arrival they will join and link with the waria community, that is coordinated by a senior 'mami' who provides guidance and protection. A mami usually provides support to the 5–15 waria in her group, including violence protection and promotion of condom use, uptake of HIV testing and regular STI check-ups [3]. 'Mami', as a senior person also will ensure that the newcomer will be socially accepted in the network. This support and protection are needed because waria are a stigmatized and discriminated group, who are easily recognized by their looks. Waria communities may provide waria with a "safe haven" of support and recognition.

Since mamis' role may be rather instrumental, some of them are recruited and placed as field coordinators in the waria community organization. Therefore, a field coordinator is usually a key person in a district. By recruiting and cooperating with the mamis, the waria organization is able to provide the list of waria's living areas and all mamis in the five districts were asked to contact participants for the assessments. In the selected areas, mami listed the waria who were present and available in sampled living

areas at the time of data collection. All these waria were approached and included in the study.

The cooperation between mamis in five districts with the waria organization brings mutual benefits: The waria organization usually has easier access to the health services and social welfare programs which are managed by the district health and social welfare office, while mamis have ability to enter waria's social networks and mobilize them.*Waria* who live in the areas that were selected for this study, by design, have been exposed to HIV/AIDS infection prevention intervention and have access to HIV-related health services. The services were designed to cover the whole districts and all waria communities in Jakarta. Accordingly, we assume that all waria in Jakarta have been exposed to the intervention in some way. Therefore, to the extent that the present sample of waria is representative of the whole waria population in Jakarta, the results can be generalized to the Jakarta population. However, because the Jakarta population has been exposed by designed preventive interventions, care must be taken to generalize the present results to waria populations in different health care environments.

Interview Procedure

The study presented in this article was part of a broader study that covered condom use and HIV-related health-seeking behaviors. The ethical approval has been provided by the Ethical Committee Psychology University of Groningen in the Netherlands, and the IRB approval from the local institution was provided by the Ethical Committee of Psychology University of Indonesia. This article only provides data on health-seeking behaviors, including adherence to STI treatment. The study of condom use-related behaviors is presented in another paper [20].

The interviews were structured and conducted face-to-face. The interview first, assessed demographic variables, sexual history and sexual practices. Secondly, all the questions related to health-seeking behavior were asked: visiting STI services regularly, adherence to STI treatment, taking for HIV test and picking up the test result. The interviews took 45–60 min.

Due to waria's limited understanding of the meaning of questions related to sexual and HIV-related health-seeking behaviors, this study selected the interview as a method to gather the data. The interviews had been conducted by using Bahasa Indonesia combined with local and slang language. Another consideration is that the illiteracy level among waria still is very high. For that reasons, the four interviewers were trained in advance by the first author to cope with limited literacy. Five interviewers, including the first author, were involved in the data collection.

Informed consent was prepared on two levels. First, permission was granted by the "mamis" as the coordinators and leaders of waria in each district. The permission was given after the first author conducted a meeting with all "mamis" from the five districts, to explain the purpose of the study and the requirement to have an interview only on voluntary basis. Secondly, the interviewers introduced themselves to the respondents and provided them with information about the purpose of the study. The interviewers explained the respondents that the participation was on a voluntary basis, meaning that they could withdraw at any time without having to state a reason. Subsequently, the respondents were asked whether they had understood the information and were willing to participate. The actual interview started after the individual had given a verbal consent to participate. When the respondents were under 18 years old, a verbal consent was given by the "mami" as the responsible person in each group.

Unwritten informed consent was chosen for this study to assure the anonymity and confidentiality of the respondents.

The interviews were conducted at different venues. Waria usually live in groups, in the middle of a kampong (Spelled kampung in Malay and Indonesian). In Malaysia, Brunei, Indonesia and Singapore, the term kampong (village) applies to traditional villages, especially of indigenous people and the term has also been used to refer to urban slum areas and enclosed developments within towns and cities (https://en.wikipedia.org/wiki/Kampong), which is often quite crowded, and mixed with the general population. Through networks with mamis, we were able to find quiet places or separate rooms to conduct the interviews. The majority of the interviews were conducted in the waria's bed rooms, a smaller number in the salons, and the remaining in the Primary Health Center (PHC) or the mami's living rooms.

Mobile HIV test services

Questionnaire

Background characteristics. The socio-demographics gathered were age, educational level, cultural background, persons currently living with the respondent, type of job and duration of stay in Jakarta. Sexual behavior was assessed with questions

on commercial sex practices, current sex partners (only men/mostly men/men and women equally/mostly women/only women), the type of sex they most often engaged in (anal sex as the receptive partner/insertive partner/both as receptive and insertive partner/receiving oral sex/giving oral sex/insertive vaginal sex and others), condom use as the receptive partner in the past week, and condom use as the insertive partner in the past month.

The central part of the questionnaire was based on the application of the TPB on the four behaviors. The four examined behaviors are, visiting Sexually Transmitted Infection (STI) services regularly, adherence to the STI treatment, taking an HIV test and picking up the result of HIV test.

Attitude. The attitudes were assessed by using a 7-point semantic differential scale: unhealthy (1) – healthy (7); harmful (1) – beneficial (7); boring (1) – exciting (7); inconvenient (1) - fun/enjoyable (7); something that can be overlooked (1) - something I have to do (7); foolish (1) – wise (7). The items for each behavior category include the following: An example item for visiting STI services regularly: "If I go to STI services once every 2 or 3 months, this is…"; An example item for adherence to STI treatment: "If I receive drugs or get the prescription from the physician, finishing all drugs accordingly is…"; An example item for taking an HIV test: "If I take an HIV test at least once a year, this is…"; An example item for picking up the result of HIV test:,"If I pick up the results, this is…". Concerning each behavior separately, the average item score was computed to be used as the scale score: The higher the score, the more positive the attitude towards the specific behavior. The Cronbach's alphas of the four scales ranged from .70 to .88.

Subjective norms. The subjective norms were measured by using a 7-point semantic differential scale ranging from should not (1) to should (7). Items were related

to normative beliefs regarding regular partner, friends, mamis and outreach workers. The items for each behavior category were the following: “According to the following people, I should or should not visit STI services once every 2 or 3 months”, “According to the following people, I should or should not finish all drugs received from or prescribed by the physician”, “According to the following people, I should or should not take an HIV test at least once a year”, “According to the following people, I should or should not pick up the results of HIV test (after taking an HIV test). Concerning each behavior separately, the average item score was computed to be used as the scale score: The higher the score, the more positive the subjective norms towards the specific behavior. The Cronbach’s alphas of the four scales ranged from .86 to .90.

Perceived behavioral control. PBC was measured by using a 7-point semantic differential scale. The first scale ranged from very difficult (1), difficult (2), somewhat difficult (3), not easy (4), somewhat easy (5), easy (6), to very easy (7). The second scale ranged from not sure at all to be able (1) to very sure to be able (7), and the last one was completely uncertain to be able to ensure (1) to will certainly be able to ensure (7). Each behavior was assessed with three items. Example items consisted of two questions and one statement: “In the next 6 months, how easy or difficult will it be for you to visit STI services?”, “In the next 6 months, if I want to, I am sure that I will be able to finish all drugs received from or prescribed by the physician”, “In the next 6 months, how sure are you that you will be able to take an HIV test?”. Concerning each behavior separately, the average item score was computed to be used as the scale score: The higher the score, the easier engaging in the specific behavior was perceived to be. The Cronbach’s alphas of the four scales ranged from .79 to .87.

Actual behavior. Each of the four behaviors was assessed with one item. They were: (1) “In the last 6 months, how many times have you visited STI services?” The

responses indicated the number of times visiting STI services in the last 6 months; (2) "When you received medicine or got a prescription from the doctor, did you take or buy and finish it all?" The possible responses were never (1), seldom (2), sometimes (3), regularly (4), often (5), very often (6) and always (7); (3) "Did you take an HIV test?" (Yes/No); and (4) "Did you pick up the result of HIV test?" (Yes/No).

Data Analyses

Because two of the four behaviors were assessed with a binary variable, we decided to use logistic regression analysis for all four behaviors. Therefore, visiting STI services and adherence to STI treatment was also dichotomized (0 versus more than 0, and not always versus always, respectively). The covariates chosen were age, education and main job. The first analysis examined the relationships of these covariates with each of the DVs. Only when a covariate had a significant relationship with the DVs it was included in the main test: The three IVs – attitude, subjective norms and PBC – predicting each of the DVs. When one or more covariates were included, we present the statistics of the improvement of the statistical model by the set of three main predictors. When no covariate was included, we only present the statistics of the three main predictors.

To test for mediation effects, Preacher and Hayes' SPSS Macro PROCESS (version 17) was used. Because this is a fairly novel method, it will be presented here in some detail. PROCESS has been described by Preacher and Hayes (2008) as a method for testing multiple mediators. This procedure yields unstandardized path coefficients for a multiple mediator model and estimates 95 % confidence intervals (CI) of the indirect (= mediated) effect using a bootstrapping sample procedure. Assessing an indirect effect through a bootstrapping sample procedure is more reliable than testing significance of

the mediation effect, because the sampling distribution of the indirect effects is normal only for large samples. The mediation analysis used here followed the product of coefficients approach, and thus focused on the indirect effects rather than the individual paths. Using PROCESS for conducting the mediation test does not require normality in the selected variables [21].

The Mediate test was used here to examine whether 1) the relationships of subjective norms (IV) with behavior (DVs) were mediated by attitude and PBC, and whether; 2) the relationships of attitude (IV) with behavior (DVs) were mediated by subjective norms and PBC. The results below indicate mediation when the Confidence Interval of the indirect path by a 95 % bias corrected bootstrap (based on 5000 bootstrap samples) does not contain zero.

Since the model has more than one mediator, it is called a single-step multiple mediator model (see Figs. 1 and 2), in which the total effect of the model (the relationships of attitude or subjective norms with behaviors are symbolized by c) is equal to the direct effect of attitude or subjective norms on behavior which are symbolized by c'; plus the sum of the indirect effect of attitude on behaviors through subjective norms (a1b1) or PBC (a2b2), or plus the sum of the indirect effect of subjective norms on behaviors through attitude (a1b1) or PBC (a2b2). That is, $c = c' + a1b1 + a2b2$.

Results

Background Characteristics

In total, 209 waria took part in the study. The participants' mean age was 30 years (range 15–67); 23 % had been in primary school, 28 % had been in school level 7–9, and almost 42 % had a higher education level, while 5 % had studied at a university. Most

waria were unmarried (89.5 %), 5 % were married, and 5.8 % were divorced and separated.

Sex work is common among waria in Jakarta. Selling sex was an important source of income for waria: 35.9 % Reported selling sex as their primary source of income, while 24.4 % reported selling sex as their additional income. Thus, approximately 60 % of the 209 waria in our sample engaged in commercial sex.Of the 209 waria, 20.6 % had never visited STI services, 56.5 % had visited the services once or twice, and 23 % three or more times, in the last 6 months. HIV test had been taken by 90.4 % (189) of the waria, and of those, 64.6 % had picked up the results. About 85 % of those who had had a test, had been tested for HIV one to two times and 10 % had been tested for HIV three to four times, in the last 6 months.

Predicting Behaviors

Visiting STI services regularly. Because data on the use of STI services of 3 participants were missing, the analyses were conducted in a sample of 206 waria. Only "main job" was included as a covariate. The results showed (in Table 1) that by adding the set of TPB predictors, the model significantly improved (chi-square = 21.79, $p < .001$, and df = 3), with an increase in Nagelkerke's R2 of .20. One predictor was significantly related to behavior: PBC (ExpB = 1.24), indicating that the higher the PBC, the higher the chance that waria scored high on behavior.

Adherence to STI treatment. Adherence to STI treatment could only be analyzed in the 67 waria who had received an STI treatment. Only level of education was included as a covariate. The results showed (in Table 1) that by adding the set of TPB predictors, the model was significantly improved (chi-square = 39.34, $p < .001$, and df = 3), with an increase in Nagelkerke's R2 of .70. One predictor was significantly related to behavior:

PBC (ExpB = 2.19), indicating that the higher the PBC, the higher the chance that waria scored high on behavior.

Taking for HIV test. Because data on taking for HIV test of 5 participants were missing, the analyses were conducted in a sample of 204 waria. Again, only level of education was included as a covariate. The results showed (in Table 1) that by adding the set of TPB predictors, the model significantly improved (chi-square = 14.20, $p < .005$, and df = 3), with an increase in Nagelkerke's R2 of .19. One predictor was significantly related to behavior: PBC (ExpB = 1.19), indicating that the higher the PBC, the higher the chance that waria scored high on behavior.

Picking up the results of HIV test. Because only 188 participants had had an HIV test, picking up the results of the test was only analyzed among these 188 waria. No covariate has to be included. The set of three TPB predictors showed (in Table 1), only one predictor had a significant relation with behavior (chi-square = 21.30, $p > .001$, and df = 3) with Nagelkerke's R2 of .15. PBC was significantly related to behavior (ExpB = 1.27), indicating that the higher the PBC, the higher the chance that waria scored high on behavior.

Mediation Testing for Attitude and Subjective Norms

The findings from the logistic regression analyses showed that attitudes and subjective norms were not related to all four behaviors. This finding may have resulted from the relationship of attitudes with behavior being mediated by subjective norms and PBC (Fig. 1), and the relationship of subjective norms with behavior being mediated by attitude and PBC (Fig. 2). Therefore, we conducted mediation tests to examine these relations more closely, using the SPSS Macro PROCESS (version 17) by Preacher and Hayes [21]. Below (and in Tables 2 and 3) we present, firstly, the results concerning the

mediation of attitude related to behavior; and secondly, the results concerning the mediation of subjective norms related to behavior.

With regard to the relationships of attitude with behavior (Table 2), the mediation model showed that with regard to all four behaviors, PBC was a mediator. In one of the behaviors, subjective norms was also a mediator.With regard to the relationships of subjective norms with past behavior (Table 3), the mediation model showed that with regard to all four behaviors, PBC was a mediator.

Discussion

The aim of this study was to test whether the psycho-social determinants as defined by the TPB provided a suitable explanatory model for visiting STI services, adherence to STI treatment, taking an HIV test and picking up the result of HIV test among waria.

In the present study, the TPB variables were related to all four behaviors. The explained variance in behavior (Nagelkerke's R2) ranged from 15 % up to 70 %. The Nagelkerke R2 is conceptually similar to the R2 in the linear regression. It can vary between 0 (indicating that the predictors are useless in predicting the outcome variable) and 1 (indicating that the model predicts the outcome variable perfectly) [22]. The above findings are in line with reviews on the application of the TPB in the domain of health, for example by Godin and Kok (1996): They show an average explained variance in behavior of 34 % [13]. Armitage and Conner (2001) reviewed 185 studies and found that the TPB accounted for 27 % of the variance in behavior [23]. Thus, we showed that the TPB was able to explain each of the four behaviors to a substantial degree; for the very first time among waria.

A waria was attending a counselling session to get the result of HIV test
Source of photo: ASA Program/FHI

However, the psycho-social determinants in the TPB variables were differentially related to the four behaviors. Among the three TPB variables, PBC was the component that emerged as the most important and powerful predictor of all four behaviors. This finding was in line with the results of previous meta-analysis that PBC contributes significantly to the prediction of behavior, even after controlling for the effects of the theory of reasoned action variables; attitude and subjective norms [23]. The pattern of results involving PBC was consistent across the health behaviors studied. To summarize, the results of this study complement the findings of previous studies that PBC is the strongest predictor of behaviors across a wide variety of activities including HIV-related health-seeking behaviors.

Regarding attitudes and subjective norms, the logistic regressions suggested that they were less important as predictors: Attitude and subjective norms were not predictive of the four actual behaviors. Therefore, we examined possible mediation. The

mediation tests showed that the relationships of attitude with the four behaviors, and the relationships of subjective norms with the four behaviors were all mediated by PBC. This implies that although they had no direct relations with the behaviors, they still are important to address in preventive interventions.

Attitude may become more positive when the PHCs (Primary Health Center/clinics) are improving the quality of services provided such as “One roof services” (STI and HIV test services are available at one place) and “1 day services” (the PHCs/clinics release the result of HIV test at the same day when the patients take an HIV test).

Subjective norms may become more positive when the health providers are able to show friendlier, non-judgmental behaviors and positive (non-)verbal behaviors when they are providing services to the patients. When health providers act in this way, waria may recognize the consistency between subjective norms (to always find appropriate medical treatment when they are infected with STIs) and acceptance of health providers to provide the services to this specific group of patients. These kinds of circumstances indirectly will help patients to reduce and overcome unpleasant feelings such as being stigmatized and socially judged for sinful behavior; the task of engaging in the specified behaviors will become easier. The improvement of the quality of the post-test counseling (counseling for the patients after taking an HIV test) is also important. High quality counseling may help patients reduce uncertainty about their future by helping to anticipate and self-regulate the necessary changes in their lives and social relationships.

In conclusion, although subjective norms and attitude had no direct relationships with behavior, they are important for understanding health-seeking behaviors and developing interventions.

It is important to understand the mediated relationships. First, people’s ideas about what others think they should do (subjective norms) may influence their own

attitude towards the topic. It may concern a basic mechanism of social influence, in which waria adopt others' opinions to understand reality and adopt seemingly shared values as their own values. Secondly, people's ideas about what others think they should do (subjective norms) may influence their own perceived behavioral control by modeling. That is, waria may observe or hear about others engaging in the tasks of attending STI services regularly and taking an HIV test. This may signal that these behaviors are feasible and socially desirable. Again, the social environment provides basic information on how to regard accessing HIV-related health services.

The present study had some relevant limitations: First, this study was cross-sectional and, therefore, we had to assess the best parameters of future behaviors that were available; past behaviors. That is, it was not feasible to approach the waria population twice; once to assess the TPB determinants and later to assess their (future) behavior. We assessed recent (within the past 6 months) behaviors as past behaviors are consistent predictors of future behavior [24–27].

The second limitation is that the survey was conducted by rolling out a structured face-to-face interview, targeting a specific population who were accessing HIV-related health services. HIV-related health services and health-seeking behaviors are commonly associated with sexual risk behaviors and associated with the negative consequences of the risky behaviors. Therefore, the patients and their diseases are very often stigmatized, and it can be expected that respondents may have felt threatened or embarassed when being asked about their personal health issues. This may have stimulated some respondents to provide inaccurate answers. In addition, interviews are more vulnerable to social desirability bias [28], especially because waria have been exposed to prevention interventions and know what is "desired". However, the selection of the interview as a method has been considered carefully. Given that the survey was

developed to study health-seeking behavior among a minority and marginalized population (i.e., waria), the completeness, truthfulness and accurateness of information collected very much depend, first, on the ability of waria to understand the questions. Indeed, the interviewers reported some challenges during data collection regarding waria's limited understanding of the meaning of questions related to sexual and HIV-related health-seeking behaviors. In some cases interviewers needed to use local and slang language, combined with Bahasa Indonesia as the common language. In addition, the illiteracy level among waria is still very high and, therefore, the respondents were more dependent on the interviewers to respond. The second challenge that supported the decision to use interviews was related to the data being collected in the field at a variety of venues - often in inconvenient settings - making respondents hardly committed to fill in a questionnaire. Considering this situation, the authors preferred to provide full guidance by involving well-trained interviewers rather than letting the respondents fill in the questionnaires independently. The study of Dare and Cleland (1994) shows that in the face-to-face interview, the level of item non-response is low [28].

Conclusion

Notwithstanding these limitations, the current study has implications for the development of HIV/AIDS prevention interventions by targeting and improving the performance of HIV-related health-seeking behaviors in this particular group. First, this study provides sufficient support for the TPB in explaining HIV-related health-seeking behaviors. Consistent with the formulation of the TPB, PBC significantly predicted behavior. Moreover, it was the strongest predictor. Secondly, this study suggests, despite the fact that PBC is the strongest predictor, prevention interventions should not

only focus on strengthening the PBC, but also on shaping positive attitudes and subjective norms among the target audiences. These two predictors seem to have contributed the perceived of control over performance of the four behaviors.

In conclusion, besides educating waria about the consequences of not performing the behaviors (attitude), and about how important others find these behaviors (subjective norms), and by providing them with information that makes it easier to engage in the behavior (PBC), care should be taken to provide waria with positive experiences with the behavior in the context of the services. Positive experiences may shape positive attitude, a positive subjective norms and it may increase PBC.

Abbreviations

STI: Sexually Transmitted Infections; IBBS: Integrated Biological and Behavioral Survey; MOH RI: Ministry of Health Republic of Indonesia; GFATM: Global Fund to Fight AIDS, Tuberculosis and Malaria; SUM1: Scaling Up for Most-at-Risk Populations 1; USAID: United States Agency for International Development; WHO: World Health Organization; TPB: Theory of Planned Behavior; PBC: perceived behavioral control; PHC: Primary Health Center; CI: confidence intervals; IVs: independent variables; DVs: dependent variables.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

CP and AD were responsible for the conception and design of this study. CP and GH were responsible for the questionnaire development and adaptation in the context of Indonesia. CP and PR were responsible for selecting the sampling method, collected and

assembled the data in Indonesia. CP undertook the primary data analyses under supervision of AD. CP and AD wrote the first draft of the manuscript. All authors have read and approved the final manuscript.

Acknowledgements

We thank Lenny Sugiharto, Director of Srikandi Sejati Foundation and the field coordinators for opening the gate to enter the networks and involving in this study. All mamis in the data collection sites are thanked for helping to gather the 'members' and providing convenient venues to conduct the interview during data collection. Finally, we thank the waria community for their participation in the study.

References

Pisani E, Girault P, Gultom M, Sukartini N, Kumalawati J, Jazan S, et al. HIV, syphilis infection, and sexual practices among transgenders, male sex workers, and other men who have sex with men in Jakarta, Indonesia. Sex Transm Infect. 2004;80(6):536–40. doi:10.1136/sti.2003.007500.

De Santis JP. HIV infection risk factors among male-to-female transgender persons: a review of the literature. J Assoc Nurses AIDS Care. 2009;20(5):362–72. doi:10.1016/j.jana.2009.06.005.

Prabawanti C, Bollen L, Palupy R, Morineau G, Girault P, Mustikawati DE, et al. HIV, sexually transmitted infections, and sexual risk behavior among transgenders in Indonesia. AIDS Behav. 2011;15:665–73. doi:10.1080/14622200410001676305.

Ministry of Health Republic of Indonesia/MOH RI, Ministry of Justice and Human Rights Republic of Indonesia, National AIDS Commission, GFATM, SUM1/USAID, Worldbank. Survei Terpadu Biologis dan Perilaku pada Kelompok Berisiko Tinggi di Indonesia 2011. Lembar Fakta: Waria (Integrated Biological and Behavioral Survey among Most at Risk Population in Indonesia 2011. Fact sheet: Waria).

Badan Pusat Statistik & Departemen Kesehatan. Behavioral Surveillance Survey (BSS) Result in Indonesia 2004–2005. 2005.

Kementerian Kesehatan Republik Indonesia (Ministry of Health Republic of Indonesia). Estimasi dan Proyeksi HIV/AIDS di Indonesia Tahun 2011–2016 (Estimation and Projection of HIV/AIDS in Indonesia Year 2011–2016). 2014. p. 27.

Dalabetta G, Neilsen G. Efforts to control sexually transmitted infections as a means to limit HIV Transmission: what is the evidence? Curr Infect Dis Rep. 2005;7:79–84.

Steen R, Wi TE, Kamali A, Ndowa F. Control of sexually transmitted infections and prevention of HIV transmission: mending a fractured paradigm. Bull WHO. 2009;87:858–65. doi:10.2471/BLT.08.059212.

Kementerian Kesehatan Republik Indonesia, Direktorat Jenderal Pengendalian Penyakit dan Penyehatan Lingkungan (Ministry of Health Republic of Indonesia, Directorate General of Diseases Control and Health Environment). Pedoman Nasional Penanganan Infeksi Menular Seksual (National guideline of sexually transmitted infections control). 2011.

Kementerian Kesehatan Republik Indonesia (Ministry of Health Republic of Indonesia). Pedoman pelayanan konseling dan Tes HIV/AIDS secara sukarela (National guideline of HIV/AIDS voluntary counseling and testing). 2005.

Guy R, Goller JL, Spelman T, El-Hayek C, Gold J, Lim M, et al. Does the frequency of HIV and STI testing among MSM in primary care adhere with Australian guidelines? Sex Transm Infect. 2010;86:371–6. doi:10.1136/sti.2009.040972.

Ajzen I. The theory of planned behavior. Organ Behav Hum Decis Process. 1991;50:179–211.

Godin G, Kok G. The theory of planned behavior: a review of its applications to health-related behaviors. Am J Health Promo. 1996;11(2):87–98.

Mulholland E, Wersch AV. Stigma, sexually transmitted infections and attendance at the GUM clinic: an exploratory study with implications for the theory of planned behavior. J Health Psychol. 2007;12(1):17–31. doi:10.1177/1359105306069098.

Cooke R, French DP. How well do the theory of reasoned action and the theory of planned behavior predict intentions and attendance at screening programmes? A meta-analysis. Psychol Health. 2008;23:745–65.

Kakoko DC, Astrøm AN, Lugoe WL, Lie GT. Predicting intended use of voluntary HIV counselling and testing services among Tanzanian teachers using the theory of planned behavior. Soc Sci Med. 2006;63:991–9. doi:10.1016/j.socscimed.2006.02.016.

Gu J, Lau JTF, Tsui H. Psychological factors in association with uptake of voluntary counselling and testing for HIV among men who have sex with men in Hong Kong. Public Health. 2011;125:275–82.

Sheeran P, Taylor S. Predicting intentions to use condoms: A meta-analysis and comparison of the theories of reasoned action and planned behavior. J Appl Soc Psychol. 1999;29(8):1624–75.

Komisi Penanggulangan AIDS (National AIDS Commission). Laporan nasional kegiatan estimasi populasi dewasa rawan terinfeksi HIV tahun 2006 (National Report of estimates of adult population vulnerable on HIV infection year 2006). 2006.

Prabawanti C, Dijkstra A, Riono P, Hartana Tb G. Preparatory behaviours and condom use during receptive and insertive anal sex among male-to-female transgenders (Waria) in Jakarta, Indonesia. J Int AIDS Soc. 2014;17:19343.

Preacher KJ, Hayes AF. Asymptomatic and resampling techniques strategies for assessing and comparing indirect effects in multiple mediator models. Behav Res Methods. 2008;40(3):879–91.

Field A. Discovering statistics using SPSS. 4th ed. London: SAGE Publications; 2013.

Armitage CJ, Conner M. Efficacy of the theory of planned behavior: a meta-analytic review. Br J Soc Psycho. 2001;40:471–99.

Sheeran P, Orbell S. Implementation intentions and repeated behavior: augmenting the predictive validity of the theory of planned behavior. Eur J Soc Psychol. 1999;29:349–69.

Orbeil S, Hodgldns S, Sheeran P. Implementation Intentions and the theory of planned behavior. Personal SocPsychol Bull. 1997;23:945. doi:10.1177/0146167297239004.

Sutton SR. The past predicts the future: interpreting behavior-behavior relationship in social psychological models of health behavior. In: Rutter DR, Aldershot QL, editors. Soc Psycho and Health. Avebury: Euro Pers; 1994. p. 71–88.

Bagozzi RP. Attitudes, intentions, and behavior: a test of some key hypotheses. J Pers Soc Psychol. 1981;41(4):607–27. doi:10.1037/0022-3514.41.4.607.

Dare OO, Cleland JG. Reliability and validity of survey data on sexual behavior. Health Transit Rev. 1994;4(Suppl):93–110.

Tables

Table 1

Logistic Regression Analyses of Behavior of HIV-related Health-seeking Behaviors

No	Variable	Behavior				
		Exp (β)	95% CI		Nagelkerke R2	N
			Lower	Upper		
1	**Visiting the STI services regularly**				.199	206
	Attitude	1.01	0.92	1.10		
	Subjective Norms	0.10	0.91	1.10		
	Perceived Behavioral Control	1.24***	1.10	1.39		
2	**Adherence to complete STI Treatment**				.699	67
	Attitude	1.14	0.82	1.57		
	Subjective Norms	1.53	0.87	2.71		
	Perceived Behavioral Control	2.19**	1.36	3.53		
3	**Taking for HIV test**				.189	204
	Attitude	0.95	0.85	1.05		
	Subjective Norms	1.10	0.97	1.25		
	Perceived Behavioral Control	1.19**	1.06	1.34		
4	**Picking up the result of HIV test**				.147	188
	Attitude	0.96	.88	1.06		
	Subjective Norms	0.96	.87	1.06		
	Perceived Behavioral Control	1.27***	1.11	1.44		

*$p < .05$, **$p < .01$, ***$p < .001$

Table 2

Indirect Effects of Attitude on Behavior through Subjective Norms and Perceived Behavioral Control

	Point estimate	SE (boot)	Bootstrapping BC 95% CI	
			Lower	Upper
Visiting STI services regularly				
Subjective norms	-0.00	0.02	-0.04	0.04
Perceived behavioral control	0.08	0.03	0.04	0.15*
Adherence to STI treatment				
Subjective norms	0.13	0.11	0.01	0.46*
Perceived behavioral control	0.29	0.17	0.10	0.63*
Taking for HIV test				
Subjective norms	0.03	0.03	-0.01	0.09
Perceived behavioral control	0.03	0.02	0.01	0.07*
Picking up the result of HIV test				
Subjective norms	-0.01	0.02	-0.05	0.02
Perceived behavioral control	0.13	0.04	0.06	0.22*

*significant mediation

Table 3

Indirect Effects of Subjective Norms on Behavior through Attitude and Perceived Behavioral Control

	Point estimate	SE (boot)	Bootstrapping BC 95% CI	
			Lower	Upper
Visiting STI services regularly				
Attitude	0.01	0.03	-0.04	0.07
Perceived behavioral control	0.10	0.04	0.05	0.19*
Adherence to STI treatment				
Attitude	0.09	0.19	-0.26	0.51
Perceived behavioral control	0.37	0.21	0.11	0.93*
Taking for HIV test				
Attitude	-0.04	0.05	-0.15	0.02
Perceived behavioral control	0.06	0.03	0.02	0.12*
Picking up the result of HIV test				
Attitude	-0.01	0.02	-0.06	0.02
Perceived behavioral control	0.12	0.04	0.05	0.21*

*significant mediation

Figures

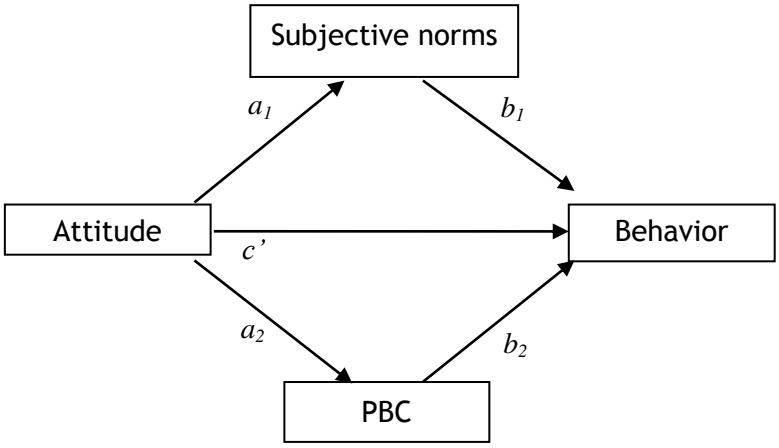

Figure 1. Indirect Effects of Attitude on Behavior through Subjective Norms and Perceived Behavioral Control.

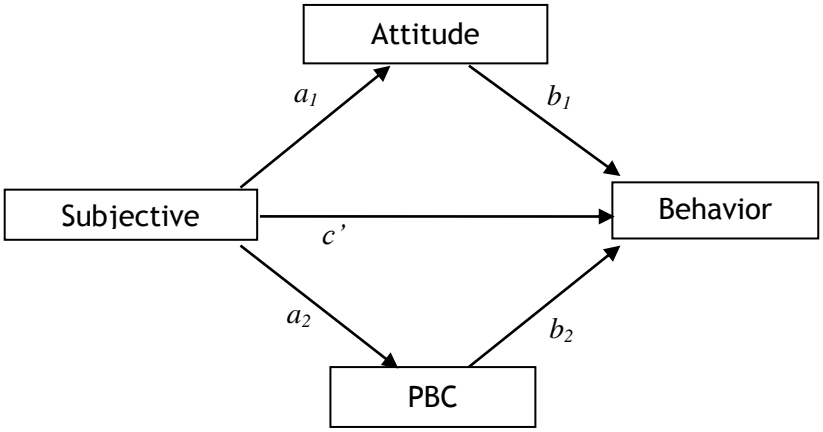

Figure 2. Indirect Effects of Subjective Norms on Behavior through Attitude and Perceived Behavioral Control

Chapter

5

Socio-demographic Characteristics, Sexual Behaviors and Condom Use of Clients of Transgender Sex Workers (TSW) in Jakarta, Indonesia

Prabawanti C., Dijkstra A., Riono P., Hartana Tb G. (2014). Socio-demographic Characteristics, Sexual Behaviors and Condom Use of Clients of Transgender Sex Workers (TSW) in Jakarta, Indonesia. (Manuscript will be submitted)

Abstract

Clients of transgender sex workers (TSWs) as one party in the decision to use condoms during anal sex to prevent HIV transmission, can play an important role as "bridging population" in the spread of HIV. This study therefore aims first to answer the question as to who the clients of transgender sex workers are. Secondly, applying the theory of planned behavior (TPB) we address clients' motives for using or not using condoms during insertive anal with TSWs and vaginal sex with women. Thirdly, we compare clients' perceptions of anal sex and vaginal sex.

Clients of transgender sex workers (*N*=250) were recruited and interviewed by transgender women using structured questionnaires, immediately after completing a commercial sex transaction with a TSW.

Results showed that clients were young, married, hetero- or bisexual migrant workers who had been living in Jakarta for a long time. In the univariate analyses all three TPB determinants were related to intentions to use condoms and to past condom use behavior, with correlations of similar magnitude, ranging from .45 to .62. The multivariate analyses showed that the explained variance in intentions and behaviors ranged from 34% to 42%. In addition, scores on the TPB determinants were higher with regard to anal sex as compared to vaginal sex.

The client population in Jakarta has a fairly homogeneous profile, and clients' considerations as to the use of condoms could be adequately understood by using the TPB. Preventive interventions can use these results to design channels and messages specifically for clients of TSWs.

Keywords: clients of transgender sex workers, sexual behavior, condom use, HIV/AIDS, Indonesia

Chapter 5.

Socio-demographic Characteristics, Sexual Behaviors and Condom Use of Clients of Transgender Sex Workers (TSW) in Jakarta, Indonesia

Introduction

Transgender women (male-to-female) are recognized as a population with elevated HIV prevalence because they practice unprotected anal sex, which is the greatest risk factor for HIV transmission (Johnson et al., 2008): worldwide data show a HIV prevalence of about 19.1% in transgender women, with an odds ratio of 48.8 (95% CI 21.2–76.3) as compared with the general adult population (Poteat et al., 2014). In a recent publication, Prabawanti, Dijkstra, Riono and Hartana Tb (2014) reported that (in Jakarta) 66% of transgender women sold sex and had had clients in the past week. Many of these women engage without protection in commercial sex with men (Prabawanti et al., 2011; Pisani et al., 2004; Nemoto, Operario, Keatley, & Villegas, 2004; Harcourt & Donovan, 2005; Clements-Nolle, Marx, Guzman, & Katz, 2001; Kellogg, Clements-Nolle, Dilley, Katz, & McFarland, 2001). A review including data from 25 studies in 14 countries reported that among transgender sex workers (TSW) the overall HIV prevalence was 27.3%, compared to 14.7% in transgender women who did not engage in sex work, 15.1% in male sex workers (MSW), and 4.5% in female sex workers (FSWs; Operario, Soma, & Underhill, 2008). Thus TSWs had higher HIV prevalence than the comparison groups.

In Jakarta, where the present study was conducted, the HIV prevalence among

transgender women was even higher compared to the above reported percentage, that is, 34% in 2007 (Department of Health/Departemen Kesehatan Republic of Indonesia, Central Bureau of Statistics/Badan Pusat Statistik Indonesia, United States Agency for International Development/USAID, National AIDS Commission/Komisi Penanggulangan AIDS, and Family Health International/ASA Program, 2007) and 31% in 2011 (Ministry of Health Republic of Indonesia/MOH RI, Ministry of Justice and Human Rights Republic of Indonesia, National AIDS Commission, GFATM, SUM1/USAID, and Worldbank, 2011). Although the rate of reported consistent condom use among transgender women in Jakarta increased from 15% in 2007 (Department of Health/Departemen Kesehatan Republic of Indonesia, Central Bureau of Statistics/Badan Pusat Statistik Indonesia, United States Agency for International Development/USAID, National AIDS Commission/Komisi Penanggulangan AIDS, and Family Health International/ASA Program, 2007) to 59% in 2011 (Ministry of Health Republic of Indonesia/MOH RI, Ministry of Justice and Human Rights Republic of Indonesia, National AIDS Commission, GFATM, SUM1/USAID, and Worldbank, 2011), even the latter higher percentage indicates that the present level of condom use by transgender women with their male partners (including their commercial sex partners or clients) is still not sufficient to decrease HIV transmission in this population.

The causes of inconsistent condom use are divers and complex, including the influence of clients, brothel owners or pimps (Rekart, 2005). It seems that female sex-work establishments that require condom use or sex workers who insist on condom use often miss out on clients and money. The fact that many clients did not want to use condoms was an economic disincentive for establishment owners to promote safer behavior at their establishments: men could easily go to another establishment or to a sex worker who did not require condom use (UNAIDS, 2000). In the case of TSWs, similar

mechanisms could be at work, as the most common reason for transgender women to engage in sex work was financial survival, a result of discrimination against transgender women in the regular job market (Nemoto, Operario, Keatley, & Villegas, 2004). Moreover, findings from a study in China suggested that differences in socioeconomic profile and organizational hierarchies among different groups of sex workers create different barriers to condom use, and that major barriers to condom use are linked to economic deprivation and threats of violence from clients (Huang, Henderson, Pan, & Cohen, 2004). For example, compared with other sex workers, street-walkers (considered to be of low status) are less likely to use condoms with their clients (Huang, Henderson, Pan, & Cohen, 2004). Similarly, most TSWs made their commercial transactions on the road, in parks and at railway stations (Prabawanti, Dijkstra, Riono, & Hartono Tb, 2014), which put them in a vulnerable situation with regard to violence. Indeed, in general, street-based sex workers have an increased risk of exposure to violence. However, violence by an intimate partner has also been associated with an increased risk of HIV infection (Rekart, 2005). To conclude, a lack of consistent condom use can be traced back not only to TSWs' decisions but also to strong external factors such as the desires

A client was interviewed at a railway in East Jakarta

and demands of their clients.

Thus, to understand TSWs' condom use we must understand the client. However, clients are also directly involved in the spread of HIV infection in another way. When HIV prevalence among transgender women is high and condom use is inconsistent, they expose their male sex partners, especially their commercial sex partners (clients), to an increased risk of HIV and other sexually transmitted infections (STI). Moreover, clients who have more frequent commercial sex transactions may also have varying and concurrent sexual partnerships with women or other men (Operario, Burton, Underhill, & Sevelius, 2008; Nemoto, Operario, Keatley, Han, & Soma, 2004). They hereby increase the risk of HIV transmission to the other sex partners (e.g., their female and/or male partners, including other sex workers). As a result, clients may play a central role as part of a "bridging population" in the spread of HIV (Ota, Wariki, Mori, Hori, & Shibuya, 2011; Alary & Lowndes, 2004). Moreover, as many of these clients of sex workers, including clients of TSWs, are unwilling to use condoms during sexual relations, sex workers are not always successful in negotiating condom use (Bharat, Mahapatra, Roy, & Saggurti, 2013; Kamal, Hassan, & Salikon, 2013).

Since clients of TSWs are directly involved in condom use (or not), promotion of consistent condom use among these men, especially when engaging in high risk sexual behaviors (i.e., anal sex), must be considered strategic to the reduction of HIV transmission. Several studies are available about clients of female sex workers in Indonesia (Pisani et al., 2004; Ford & Wirawan, 2005; Ford, Wirawan, & Muliawan, 2002; Ford et al., 1996; Fajans, Ford, & Wirawan, 1995; Fajans, Wirawan, & Ford, 1994). However, only limited information is available about condom use and sex behaviors among TSW clients. One of the few studies about men who have sex with transgender women was conducted by Operario, Burton, Underhill, and Sevelius (Operario, Burton,

Underhill, & Sevelius, 2008). This qualitative study among 46 men showed the heterogeneity of clients' identities and motives but did not address safe sex and condom use. It is therefore our aim with the current study to gather knowledge on clients and their sexual behaviors, including condom use, for the sake of health promotion.

Research has indicated that theory-based health promotion interventions addressing multiple determinants of condom use are the most successful in inducing behavioral change (Bryan, Aiken, & West, 1996; Fisher & Fisher, 1992; Fisher & Fisher, 1996; Fisher & Fisher, 2000; Jemmott, Jemmott, & Fong, 1998). Fisher and Fisher (2000) reported that well designed, targeted, theory-based behavior change interventions can be effective in reducing the spread of HIV. Accordingly, behavioral intervention experts, applying theoretical models of psychosocial determinants of behavior, have designed a number of approaches to change people's risk behavior in the direction of consistent condom use. One of the theories most often used to predict condom use is the theory of planned behavior (TPB; Albarracin, Johnson, Fishbein, & Muellerleile, 2001; Bennet & Bozionelos, 2000; Sheeran, Abraham, & Orbell, 1999; Sheeran & Taylor, 1999). The TPB postulates three conceptually independent determinants of intention. The first is the attitude toward the behavior: the degree to which a person has a favorable or unfavorable opinion of the behavior in question. The second predictor is a social factor, a person's subjective norm: the perceived social pressure to perform or not to perform the behavior. The third predictor of intention is the person's degree of perceived behavioral control (PBC): the extent to which they feel they have control over performing the behavior. PBC would include the perceived influence of both internal (self-efficacy, skills) and external (opportunities, constraints) factors and is assumed to reflect past experience as well as anticipated impediments and obstacles. The TPB predicts that the more favorable a person's attitude and subjective norm with respect to

a behavior and the greater their PBC, the stronger will be their intention to perform the behavior (Ajzen, 1991)]. Rivis and Sheeran (2003) concluded that the TPB has been successfully applied to a wide range of behaviors, and meta-analytic reviews support the theory's predictions. In a review of the application of the TPB to health-related behaviors, Godin and Kok (1996) reported that with respect to explaining intention, the theory seems to perform quite well across behavioral categories, but that for predicting behavior its efficiency varies. In a narrative review, Bennett and Bozionelos (2000) highlighted the usefulness of the TPB in predicting both intentions to use and actual use of condoms, while Sheeran and Taylor (1999) highlighted that perceived behavioral control was a reliable predictor of behavioral intentions and better explained variance than did attitudes and subjective norms. We conclude that the TPB is an effective tool and have therefore chosen to use it as the psychological framework for our study. Although similar determinant studies have been conducted among heterosexuals (Sheeran & Taylor, 1999; Gredig, Nideroest, & Parpan-Blaser, 2006), homosexual men (De Wit, Stroebe, De Vroome, Sandfort, & Van Griensven, 2000), gay men (Rye, Fisher, & Fisher, 2001), and adolescents (Van Empelen & Kok, 2006; Van Empelen & Kok, 2008), no published data are available on TPB variables in relation to condom use among clients of TSWs.

Objectives

This cross-sectional study aims to answer three questions. The first question is: "Who are the clients of TSWs?" We hope to learn this by investigating their demographic characteristics and sex behaviors. The second question is: "Why do clients use or not use condoms during insertive anal sex or during vaginal sex?" To answer this we will apply the theory of planned behavior. The third question is: "What are the psychological

differences between condom uses in different sexual situations?" To answer this we will compare condom use by clients during insertive anal sex with TSWs and during vaginal sex with women, applying factors from the theory of planned behavior.

Methods

Recruitment Procedure

We collaborated with the transgender organization in Jakarta (Yayasan Srikandi Sejati) to get access to commercial sex sites and approach transgender field coordinators ("*mami*") in the city's five districts. The transgender organization informed the "*mami*" about this project and asked their permission to conduct the study. A "*mami*" is usually a senior transgender individual who provides support for the 5-15 transgender women in her group, including violence protection and promotion of condom use, HIV testing and regular STI checkups (Prabawanti et al., 2011). After informing the *mamis* the interviewers then approached the TSWs and used them as key contacts to reach the clients.

Both information about the characteristics of clients and an estimate of the times when commercial sex transactions take place are essential to be able to approach the clients. TSWs have commercial sex transactions on five to six days per week. On those days there are peak and off-peak times, indicated by the number of clients then engaged in commercial sex transactions. To gather a representative sample of the population for our interviews we selected Tuesday or Wednesday during the week, and Friday and Saturday during the weekend. TSWs sell sex and meet their clients in parks,

A client just finished an interview session at one of the road in South Jakarta

at railway stations, and on the road. As clients prefer not to be identified specifically as clients of TSWs we recruited our participants at locations used more generally for commercial sex transactions.

We used maps from the transgender organization in Jakarta (Yayasan Srikandi Sejati) to select the sites where TSWs practice commercial sex. We recruited participants from the Center of Jakarta (*N*=47), East Jakarta (*N*=76), West Jakarta (*N*=30), South Jakarta (*N*=42), and North Jakarta (*N*=60) between June and July of 2011. In total we approached 255 clients of TSWs, 250 of whom met the inclusion criteria. The criteria were the following: male, 18 years old or above, having completed a commercial sexual transaction with a transgender sex worker just before the interview, and voluntarily participating in the study. Four participants were excluded: two clients were

under 18 years old and two did not have commercial sexual transactions with a transgender sex worker before the interview session. Only one participant refused to participate. After completing the interview session, the recruited participants received an agreed financial incentive equal to about $4.00 (US), while the TSWs who referred their clients received an agreed financial incentive equal to about $2.00 (US) per referred client. To avoid abuse of this incentive we allowed only a proportional number of clients, based on the number of TSWs, to be recruited at each location and district.

Interview Procedure

The research presented in this article was part of a broader study. The interviews were structured and conducted face-to-face, directly after clients completed their commercial sex transaction with a TSW. Interviews were made during a period when commercial sex was taking place, from late evening until early morning (between 10 or 11 pm to 4 or 5 am). Interviews of 30 to 45 minutes per client were conducted, close to the locations of the commercial sex transactions.

Five trained transgender interviewers were involved in data collection. The interviewers were NGO activists who had been working as peer educators and were commonly working in HIV infection and AIDS prevention, care, support and treatment programs. In addition to their knowledge and skills, they were trained in interview techniques. We recruited transgender women to conduct the interviews because we expected clients of TSWs to be more comfortable, open and sincere with these individuals about their sexual behavior than with male or female interviewers.

The training of interviewers consisted of two main sessions. The first session dealt with the content of the interview; the structured questionnaire was read and the meaning of all question items was explained, as well as the response options. In the

second session the interviewers practiced their new skills by interviewing their friends. The objective was to ensure that the interviewers were able to correctly deliver the items and record responses in the questionnaire.

At the beginning of each interview the interviewers introduced themselves, provided participants with information about the purpose of the study, and established conditions for confidentiality. They asked the participants whether they understood the information and were willing to participate. Participants gave verbal consent only, to assure anonymity and confidentiality. The interview was conducted only after participants understood the information and agreed to join. Immediately after each interview the interviewer signed a form which was attached to the interview questionnaire indicating that the data were gathered with full consent. This consent procedure was previously approved by the Ethical Committee Psychology at the University of Groningen, the Netherlands and the Ethical Committee of Psychology University of Indonesia. When the interview was completed data forms were put into an anonymous sealed envelope.

Questionnaire

First we assessed demographic variables, i.e. age, educational level, persons currently living with participants, type of job, and duration of stay in Jakarta. One question to assess sexual identity was, "How do you identify yourself?" (heterosexual, bisexual, homosexual, or gay man). This self-identification relates to the sex to whom one is sexually and romantically attracted (http://www.apa.org/pi/lgbt/resources/sexuality-definitions.pdf). For the present study the categories homosexual and gay man were put together.

Next, clients' sexual history was assessed by asking about their first experience of

penetrative sex, their age when having first penetrative sex, the type of sex (anal, vaginal, or both), the gender of the sex partner, and the type of relationship with the sex partner. Questions about current sexual behaviors were used to assess the subject's commercial sex and condom use behaviors with TSWs, sex behaviors (anal, vaginal, or both and oral sex) and condom use with wife or girlfriend/s, and commercial sex and condom use with female sex worker/s or other women (not wife or girlfriend).

The central part of the questionnaire comprised the application of the TPB to assess condom use during insertive anal sex and insertive vaginal sex.

Attitude. Attitudes were assessed using a 7-point semantic differential scale: *unhealthy* (1) – *healthy* (7); *harmful* (1) – *beneficial* (7); *boring* (1) – *exciting* (7); *inconvenient* (1) - *fun/enjoyable* (7); *something that can be overlooked* (1) – *something I have to do* (7); *foolish* (1) – *wise* (7). Items for each behavioral category included the following: "If I always use a condom when I have insertive anal sex, it will be…" and "If I always use a condom when I have insertive vaginal sex, it will be…" For each separate behavior the average item score was computed as the scale score: the higher the score, the more positive the attitude towards the specific behavior. The Cronbach's alphas for the two scales were .80 and .90 respectively.

Subjective norms. Subjective norms were measured by using a 7-point semantic differential scale ranging from *should not* (1) to *should* (7). The items for each behavior category were the following: "According to the following people, I should/should not always use a condom when having insertive anal sex" and "According to the following people, I should/should not always use a condom when having insertive vaginal sex". With regard to both behaviors four groups of people were referred to: My transgender/female sex partner thinks I…; My best friends (not sex partner) think I…; Men who are similar to me and who have sex with a transgender woman/female think

I…; Men in general who have sex with a transgender woman/female think I…" Concerning each behavior separately, the average item score was computed to be used as the scale score: the higher the score, the more positive the subjective norms regarding the specific behavior. The Cronbach's alphas for the two scales were .85 and .88 respectively.

Perceived behavioral control. PBC was measured with two items on 7-point scales. The first scale ranged from *very difficult* (1), *difficult* (2), *somewhat difficult* (3), *not easy* (4), *somewhat easy* (5), *easy* (6), to *very easy* (7). The second scale ranged from *not sure will be able at all* (1) to *very sure will be able* (7). Example items are: "If you have insertive anal sex, how easy or difficult is it for you to always to use a condom?", and "If you want to, how certain are you that you will always be able to use a condom when having insertive anal sex?" Concerning each behavior separately, the average item score was computed to be used as the scale score: the higher the score, the higher the perceived behavioral control. The Cronbach's alphas for the two scales were .64 and .80 respectively.

Behavioral intention. Intentions with regard to each of the two condom use behaviors were measured using two items. The first item was a 7-point scale ranging from *never* (1), *seldom* (2), *sometimes* (3), *regularly* (4), *often* (5), *very often* (6), to *always* (7). The second was the same scale ranging from *not at all intend to* (1) to *strongly intend to* (7). Examples of items are: "If you have insertive anal sex, will you always use a condom?" and "If you have insertive anal sex, do you intend to always use a condom?" Concerning each behavior separately, the average item score was computed to be used as the scale score: the higher the score, the higher the intention to perform the specific behavior. The Cronbach's alphas for the two scales were .78 and .89 respectively.

Actual (past) behavior. Each assessed actual (past) behavior was represented by one item. They were: (1) "Do you usually use a condom when you have insertive anal sex?" and (2) "Do you usually use a condom when you have insertive vaginal sex?' The response options were: *never* (1), *seldom* (2), *sometimes* (3), *regularly* (4), *often* (5), *very often* (6) and *always* (7). Past condom use could only be assessed for those participants who reported actually to have had anal sex or vaginal sex in the past.

Data Analyses

Summary statistics were generated to evaluate the distributions of variables and identify possible distribution problems. This check showed that the distributions attitude, subjective norms, and PBC as independent variables (IVs), and behavioral intention and actual (past) behavior as dependent variables (DV) as indicated by skewness and kurtosis, met the statistical assumption of normality (most were in the range of -1 to 1; the most extreme was -1.26).

Multiple linear regressions were used to examine the relationships of IVs (attitude, subjective norms and PBC) on the one hand and DVs - intention and actual (past) behavior - on the other hand. Correlation analyses were applied to examine the relationships between the three TPB determinants (attitude, subjective norms and PBC) and intention and actual (past) behavior, and to examine the relationship between intention and actual (past) behavior. A paired-sample t-test was applied to compare attitude, subjective norms, PBC and intention in two situations: condom use during insertive anal sex and during vaginal sex. With regard to intention, all participants were included in the analyses of TPB determinants, while with regard to actual (past) behavior only the subsamples who indicated to have had anal sex or vaginal sex in the past were included.

Results

Demographic Characteristics

A total of 250 clients of TSWs took part in the study (Table 1). The participants' mean age was 27.28 years (*SD*=8.58), and their mean education level was 3.43 (*SD*=0.81). Based on their jobs they can be regarded as a middle-low socioeconomic group. Most clients of TSWs were married (94.8%), but only 10.8% were living with their wife or regular female partner. The mean duration of living in Jakarta was 16 years (*SD* =11.02). Fifty-two percent identified themselves as heterosexual, 41.6% as bisexual, and 6% as homosexual or gay men. The majority of participants reported being circumcised (97.2%).

Past and Current Sex Behaviors

Table 2 shows clients' responses to the questions on past and present sex behaviors. Most of the participants' first penetrative sex was vaginal sex (84.7%), while 14% had had insertive anal or both anal and vaginal sex. Although for most participants their first penetrative sex had been vaginal sex with a woman, their current sex behaviors showed that in the last month participants had had sex with 4 or more TSWs (18.8%), three TSWs (18.8%), two TSWs (28.4%), and one TSW (34%). More than 80% of the participants had more than once visited TSWs for commercial sex transactions. These men could thus be considered as fairly regular clients of TSWs.

The percentage of condom use during insertive anal sex with transgender sex workers in the last month (*N*=250) ranged from always (54%), often (21.6%), sometimes (21.6%), to never (2.8%). The percentage of condom use during vaginal sex with wife/girlfriends in the last month (*N*=143) ranged from 21.7% (always), 11.9% (often), 27.3% (sometimes), to 39.2% (never). The percentage of condom use during vaginal sex

with female sex workers/other women in the last month (*N*=117) ranged from 34.2% (always), 18.8% (often), 23.9% (sometimes), to 23.1% (never). Of all the participants (*N*=250), about 95% received oral sex from TSWs during commercial sex transactions.

The TPB Analyses

Correlation analyses and multivariate linear regression analyses were conducted to test the TPB relations (Tables 3 and 4).

Intention to use a condom. The correlational analyses showed that all three TPB determinants were significantly related to the intention to engage in anal (ranging from

The 'Room' for commercial sex transaction in North Jakarta

.45 to .58) or vaginal sex (ranging from .55 to .56) in the complete sample (*N*=250). The regression analyses showed that in this sample all three TPB determinants were still related to intention, explaining 39% of variance in the case of anal sex and 42% in the case of vaginal sex.

Condom use during insertive anal sex. The correlational analyses showed that all three TPB determinants were significantly related to condom use during anal sex with TSWs (ranging from .46 to .62) in the subsample (*N*=143). The regression analyses showed that in this subsample only attitude and perceived behavioral control were still related to condom use, explaining 42% of variance.

Condom use during vaginal sex with wife/girlfriend. The correlational analyses showed that all three TPB determinants were significantly related to condom use during vaginal sex with wife/girlfriend (ranging from .50 to .53) in the subsample (*N*=203). The regression analyses showed that in this subsample all three determinants were still related to condom use, explaining 36% of variance.

Condom use during vaginal sex with FSW/other women. The correlational analyses showed that all three TPB determinants were significantly related to condom use during vaginal sex with FSWs/other women (ranging from .50 to .52) in the subsample (*N*=140). The regression analyses showed that in this subsample only subjective norm and perceived behavioral control were still related to condom use, explaining 34% of variance.

Intention-behavior relation. The three correlations between intention and behavior were significant and ranged from .81 to .86.

Comparing Condom Use during Anal and Vaginal Sex

A paired-sample t-test (within subject) was conducted in the complete sample to compare attitude, subjective norms, PBC and intention with regard to condom use during insertive anal sex and with regard to condom use during vaginal sex. Condom use during anal sex scored significantly higher on all four psychological measures: attitude was more positive (anal sex M=34.0, SD=6.89; vaginal sex M=29.44, SD=10.23; t (247) = 8.75, p = < .001). The subjective norm was more positive (anal sex M=21.18, SD=6.05; vaginal sex M=15.31, SD=7.5; t (249) =12.42, p = < .001). PBC indicated more perceived control (anal sex M=11.29, SD=2.23; vaginal sex M=9.46, SD=3.23; t (249) =9.70, p = < .001). The intention to use a condom was stronger (anal sex M=11.55, SD=2.59; vaginal sex M=8.19, SD=4.07; t (249) =13.51, p = < .001).

Discussion

TSW clients were young, married migrant workers who had been living in Jakarta for a long time. Most of the participants' first penetrative sexual acts had been vaginal sex (84.7%), and about half of these men identified themselves as heterosexual and about 42% as bisexual. Only a small proportion (6%) identified themselves as homosexual or gay men. The fact that most of the participants were married men could indicate that they were sexually active but living away from their wife or regular female partner. Therefore, having sex with TSWs could be seen as a reasonable substitute to fulfill sexual needs while they were far away from their steady sex partners.

More than 80% of the participants visited TSWs more than once for commercial sex transactions. This suggests that participants had more than one sexual partner during a period of time. Nevertheless, even though they had multiple sex partners (the wife/regular female partner and TSWs), the results show that they did not consistently

practice condom use during every sex act. This verifies their potential role in the spread of HIV.

The examination of the TPB variables showed that attitude, subjective norms, and PBC were significantly related to intentions and actual past behavior. In the univariate analyses all three determinants were related with correlations of similar magnitude, ranging from .45 to .62. The multivariate analyses showed that in insertive anal sex with transgender women and in vaginal sex with FSW/other women subjective norms and attitude, respectively, were not significantly related to the behavior. This difference with the univariate analyses may indicate mediational relations between the three TPB predictors. These multivariate analyses showed that the explained variance in intentions and behaviors ranged from 34% to 42%. To compare, in the review across 67 TPB studies in various samples on various behaviors, Sheeran and Taylor (1999) concluded that on average the TPB variables explained 47% variance in intentions, with this percentage ranging from 17% to 69% with regard to condom use. Also with regard to the correlations between intentions and behavior (>.80) our findings are in line with those meta-analyses. In conclusion, our data show those clients' considerations as to whether to use condoms can be adequately understood by means of the TPB.

It seemed that using condoms during insertive anal sex with a TSW and vaginal sex with a woman was perceived differently: the results indicate that clients evaluate condom use during insertive anal sex more positively than condom use during vaginal sex; they believe that important others find it more important to use condoms during anal sex, and they perceive using condoms during anal sex to be more under their control. Also, the intentions to use condoms during anal sex were stronger. Thus, the scores were consistently stronger in the direction of using a condom in insertive anal sex with TSWs. However, the TPB variables regarding vaginal sex referred to "having vaginal

sex with a female", but did not specify whether the sex was with a FSW/another woman or with the own wife/girlfriend. This seems relevant, as the percentages of consistent ("always") condom use during insertive anal sex with TSWs, vaginal sex with wife/girlfriend, and vaginal sex with FSW/other women were 54%, 37%, and 65% respectively. These figures suggest that clients are less inclined to use condoms with their own steady partner, and more aware of risks of unsafe sex with sex workers. This dimension of steady versus non-steady/commercial sex partner has previously been documented in Van Empelen and Kok (2006) and Miller et al (2004).

The present study had several limitations: first, it was cross-sectional. We used this design because clients were not easy to approach and we did not expect to be able to meet the same clients twice, once to assess the TPB determinants and later to assess their intention and (future) behavior. Therefore, we assessed recent (within the last month) condom use behaviors as actual (past) behaviors. In general, measures of intention and actual (past) behavior can be regarded as the best available predictors of future behavior (Sheeran & Orbell, 1999; Orbell, Hodgkins, & Sheeran, 1997; Bagozzi, 1981).

The second limitation is that the survey was conducted by rolling out a structured face-to-face interview, targeting a specific population who were performing sexual behaviors associated with a risk of negative consequences. Such participants are often unwilling to be identified and may feel threatened or embarrassed when asked about their sex behaviors. This could cause some participants to provide inaccurate answers. In addition, interviews on sexual behaviors are more vulnerable to a social desirability bias (Dare & Cleland, 1994), especially because TSWs and their clients have been exposed to prevention interventions and participants know what responses are "desired". Nevertheless, the selection of the interview as a method was considered carefully. A

factor that strongly supported the decision to use interviews was that the data were collected in the field at a commercial sex setting with a variety of venues, often in inconvenient settings, and during unusual working hours (very late evening to very early morning), making participants less committed to fill in a questionnaire. Considering this situation, the authors preferred to provide full guidance involving well-trained interviewers rather than letting participants fill in the questionnaires independently. The study by Dare and Cleland (1994) on sexual behaviors shows that in the face-to-face interview, the level of item non-response is generally low.

The current study provides new information that can lead to the development of HIV infection/AIDS prevention interventions by targeting and improving the performance of condom use behavior in this particular group. First, our study discovered the characteristics of the clients. The prototypical client was a young married man, a migrant worker of lower socioeconomic status, who was living away from his wife or regular female partner for a certain period of time. Although most of the participants in this study were married and had a wife or regular female partner, they were currently practicing anal sex and oral sex with TSWs. Intervention strategies may need to consider these reported characteristics to effectively reach this target group; i.e., the message should focus on the most important risk behavior (i.e., anal sex), and acknowledge the situation of these men. Given their socioeconomic status the message should be brief, easy to read, and quickly understandable. Furthermore, the selection of media and channels should be appropriate and adapted to the characteristics of these young married men and be attractive and culturally acceptable (e.g. different kinds of attractive printed, audio and/or visual media, a combination of educational and entertainment events conducted in commercial sex setting). We cannot expect these men to keep these media and take them home, as they do not want to be identified as

clients of TSWs. Our experience thus suggests that the best approach to reach the clients is by establishing contact through the TSWs. Moreover, the community based approach – non-institutional or non-facility based – seems most appropriate to reach this group of people. A community-based intervention has the capacity to reach those who would not participate in a facility-based intervention (Johnson et al., 2008).

Secondly, with regard to the TPB findings, some recommendations can be made as to message content. Perceived behavioral control refers to the ease of condom use, which is relative to the person's ability or skills in using condoms. Prevention interventions could include: providing more resources such as making condoms readily available at the most likely point of "sales" (e.g. TSWs could include the condom as part of the package of services, and condoms could be sold at kiosks located in commercial sex settings); selling condoms at subsidized or affordable prices; and providing condoms with a greater variety of choices (e.g. condoms of various brands, specifications, and flavors). In addition, field workers or health educators need to equip and strengthen clients' skills with regard to correct condom use (e.g. practice putting on condoms by using a 'dildo'). Since clients are assumed to have closer contact with TSWs, the outreach/field workers could involve the TSWs in educating and transferring necessary skills to their clients. These efforts could in turn help to empower the TSWs, increase their self-efficacy, and strengthen their power to negotiate safe sex behaviors with their clients.

Attitude and subjective norms were also important correlates of intentions and behavior. To strengthen their positive attitudes, clients need to know the importance of correct and consistent condom use to protect themselves and their sex partners from the risk of HIV transmission. To strengthen their subjective norms, clients need to be made aware of the expectations of significant others with regard to consistent condom

use during every high risk sex act. However, to achieve a significant improvement in the subjective norms of the clients, a solid supportive environment to encourage condom use needs to be created. Accordingly, the existing program needs to develop secondary interventions to target local stakeholders, gate-keepers, community and religious leaders. The program should deliver positive messages to demystify and destigmatize condoms and to emphasize the importance of their use by people engaging in high risk sexual behaviors.

To conclude, because clients of TSWs often have multiple sex partners and many do not use condoms consistently, they contribute to the spread of HIV. Therefore, they should also be targeted by prevention interventions. Such interventions should be designed specifically for this group, taking into account their situation and their characteristics. In addition, interventions should try to change each of the three psychological factors defined in the TPB. Investing in safe sex on the part of clients is one promising route to stop the spread of HIV and prevent a lot of suffering.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.

Alary, M & Lowndes, C.M. (2004). The central role of clients of female sex workers in the dynamics of heterosexual HIV transmission in sub-Saharan Africa. *AIDS*, 18(6), 945-947. DOI: 10.1097/01.aids.0000111473.61782.1f.

Albarracin, D., Johnson, B.T., Fishbein, M., & Muellerleile, P.A. (2001). Theories of reasoned action and planned behavior as models of condom use: a meta-analysis. *Psychological Bulletin*, 127(1), 142-161. CHIP Documents. Paper 8. Available: http://digitalcommons.uconn.edu/chip_docs/8.

American Psychological Association. Definition of Terms: Sex, Gender, Gender Identity, Sexual Orientation. Available: http://www.apa.org/pi/lgbt/resources/sexuality-definitions.pdf.

Bagozzi, R.P. (1981). Attitudes, intentions, and behavior: a test of some key hypotheses. Journal of Personality and Social Psychology, 41(4), 607-627. DOI: 10.1037/0022-3514.41.4.607.

Bennett, P & Bozionelos, G. (2000). The theory of planned behavior as predictor of condom use: a narrative review. *Psychology, Health and Medicine*, 5(3), 307-326. DOI: 10.1080/713690195.

Bharat, S., Mahapatra, B., Roy, S., & Saggurti, N. (2013). Are female sex workers able to negotiate condom use with male clients? The case of mobile FSWs in four high HIV prevalence states of India. *PLOS ONE*, 8(6), e6804. Available from: http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0068043. DOI:10.1371/journal.pone.0068043.

Bryan, A.D., Aiken, L.S., & West, S.G. (1996). Increasing condom use: evaluation of a theory-based intervention to prevent sexually transmitted diseases in young women. *Health Psychology*, 15, 371-382.

Clements-Nolle, K., Marx, R., Guzman, R., & Katz, M. (2001). HIV prevalence, risk behaviors, health care use, and mental health status of transgender persons: Implications for public health intervention. *American Journal of Public Health*, 91(6), 915-921.

Dare, O.O & Cleland, J.G. (1994). Reliability and validity of survey data on sexual behaviour. Health Transition Review, Suppl(4), 93-110.

Department of Health/Departemen Kesehatan Republic of Indonesia, Central Bureau of Statistics/Badan Pusat Statistik Indonesia, United States Agency for International Development/USAID, National AIDS Commission/Komisi Penanggulangan AIDS, and Family Health International/ASA Program. (2007). *Integrated biological behavioral surveillance among most at risk group in Indonesia 2007*. Surveillance Highlights: *Waria*.

De Wit, J.B.F., Stroebe, W., De Vroome, E.M.M., Sandfort, T.G.M., & Van Griensven, G.J.P. (2000). Understanding AIDS preventive behavior with causal and primary partners in homosexual men: the theory of planned behavior and the information-motivation-behavioral-skills model. *Psychology & Health*, 15, 325-340. DOI: 10.1080/08870440008401996.

Fajans, P., Ford, K., Wirawan, D.N. (1995). AIDS knowledge and risk behaviors among domestic clients of female sex workers in Bali, Indonesia. *Social Science and Medicine*, 41(3), 409-417.

Fajans, P., Wirawan, D.N., & Ford, K. (1994). STD knowledge and behaviours among clients of female sex workers in Bali, Indonesia. *AIDS CARE*, 6(4), 459-475.

DOI:10.1080/09540129408258661.

Fisher, J.D & Fisher, W.A. (1992). Changing AIDS risk behavior. *Psychological Bulletin*, 111, 455-474.

Fisher, J.D & Fisher, W.A. (1996). The information-motivation-behavioral skills model of AIDS risk behavior change: empirical support and application. In: Oskamp S, Thompson SC, editors. *Understanding and preventing HIV risk behavior*. CA: Thousand Oaks: Sage: 100-127.

Fisher, J.D & Fisher, W.A. (2000). Theoretical approaches to individual-level change in HIV risk behavior. CHIP Documents. Paper 4. Available: http://digitalcommons.uconn.edu/chip_docs/4.

Ford, K & Wirawan, D.N. (2005). Condom use among brothel-based sex workers and clients in Bali, Indonesia. *Sexual Health*, 2(2), 89–96. http://dx.doi.org/10.1071/SH04051.

Ford, K., Wirawan, D.N., & Muliawan, P. (2002). Social influence, AIDS/STD knowledge, and condom use among male clients of female sex workers in Bali. *AIDS Education & Prevention*, 14(6), 496-504.

Ford, K., Wirawan, D.N., Fajans, P., Meliawan, P., MacDonald, K., Lorna, T. (1996). Behavioral interventions for reduction of sexually transmitted disease/HIV transmission among female commercial sex workers and clients in Bali, Indonesia. *Journal of the International AIDS Society*, 10(2), 213-222.

Godin, G & Kok, G. (1996). The theory of planned behavior: a review of its applications to health-related behaviors. *American Journal of Health Promotion*, 11(2), 87-98. DOI: http://dx.doi.org/10.4278/0890-1171-11.2.87.

Gredig, D., Nideroest, S., & Parpan-Blaser A. (2006). HIV-protection through condom use: testing the theory of planned behaviour in a community sample of

heterosexual men in a high income country. *Psychology & Health*, 21(5), 541-555. DOI: 10.1080/14768320500329417.

Harcourt, C & Donovan, B. (2005). The many faces of sex work. *Sexually Transmitted Infections*, 81, 201–206. DOI: 10.1136/sti.2004.012468.

Huang, Y., Henderson, G.E., Pan, S., & Cohen, M.S. (2004). HIV/AIDS risk among brothel-based female sex workers in China: assessing the terms, content, and knowledge of sex work. *Journal of Sexually Transmitted Disease*, 31(11), 695–700.

Jemmott, J.B., Jemmott, L.S., & Fong, G.T. (1998). Abstinence and safer sex HIV risk-reduction interventions for African American adolescents. *JAMA*, 279, 1529-1536. DOI:10.1001/jama.279.19.1529.

Johnson, W.D., Diaz, R.M., Flanders, W.D., Goodman, M., Hill, A.N., Holtgrave, D., Malow, R., & McClellan, W.M. (2008). Behavioral interventions to reduce risk for sexual transmission of HIV among men who have sex with men (Review). *Cochrane Database of Systematic Reviews*. John Wiley & Sons, Ltd: issue 3. DOI: 10.1002/14651858.CD001230.pub2.

Kamal, S.M.M., Hassan, C.H., & Salikon, R.H. (2013). Safer Sex Negotiation and Its Association with Condom Use among Clients of Female Sex Workers in Bangladesh. *Asia Pacific Journal of Public Health*. Available: http://aph.sagepub.com/content/early/2013/12/13/1010539513510554. DOI: 10.1177/1010539513510554.

Kellogg, T.A., Clements-Nolle, K., Dilley, J., Katz, M.H., & McFarland, W. (2001). Incidence of Human Immunodeficiency Virus among male-to-female transgendered persons in San Francisco. *Journal of Acquired Immune Deficiency Syndrome*, 28(4), 380-384.

Miller, G.A., Mendoza, W., Krone, M.R., Meza, R., Caceres, C.F., Coates, T.J., & Klausner,

J.D. (2004). Clients of female sex workers in Lima, Peru: A bridge population for sexually transmitted disease/HIV transmission? *Journal of American Sexually Transmitted Disease Association*, 31(6), 337-342.

Ministry of Health Republic of Indonesia/MOH RI, Ministry of Justice and Human Rights Republic of Indonesia, National AIDS Commission, GFATM, SUM1/USAID, and Worldbank. (2011). *Survei terpadu biologis dan perilaku pada kelompok berisiko tinggi di Indonesia 2011. Lembar Fakta: Waria* (Integrated biological and behavioral survey among most at risk population in Indonesia 2011. Fact sheet: *Waria*.

Nemoto, T., Operario, D., Keatley, J., & Villegas, D. (2004). Social context of HIV risk behaviours among male-to-female transgenders of colour. *AIDS CARE*, 16(6), 724-735.

Nemoto, T., Operario, D., Keatley, J., Han, L., & Soma, T. (2004). HIV risk behaviors among male-to-female transgender persons of color in San Fransisco. *American Journal of Public Health*, July 94(7), 1193-1199.

Operario, D., Burton, J., Underhill, K., & Sevelius, J. (2008). Men who have sex with transgender women: challenges to category-based HIV prevention. *AIDS and Behavior*, 12, 18-26. DOI: 10.1007/s10461-007-9303-y.

Operario, D., Soma, T., & Underhill K. (2008). Sex work and HIV status among transgender women: systematic review and meta-analyses. *Journal of Acquired Immune Deficiency Syndrom*, 48, 97-103.

Orbell, S., Hodgkins, S., & Sheeran, P. (1997). Implementation intentions and the theory of planned behaviour. *Personality & Social Psychology Bulletin*, 23, 945. DOI: 10.1177/0146167297239004.

Ota, E., Wariki, W.M.V., Mori, R., Hori, N., Shibuya, K. (2011). Behavioral interventions to reduce the transmission of HIV infection among sex workers and their clients in

high-income countries (Review). *Cochrane Database of Systematic Reviews*. John Wiley & Sons Ltd: issue 12. DOI: 10.1002/14651858.CD006045.pub3.19.

Pisani, E., Girault, P., Gultom, M., Sukartini, N., Kumalawati, J., Jazan, S., & Donegan, E. (2004) HIV, syphilis infection, and sexual practices among transgenders, male sex workers, and other men who have sex with men in Jakarta, Indonesia. *Sexually Transmitted Infections*, 80, 536–540. DOI: 10.1136/sti.2003.007500.

Poteat, T., Wirtz, A.L., Radix, A., Borquez, A., Silva-Santisteban, A., Deutsch, M.B., Khan, S.I., Winter, S, & Operario, D. (2014). HIV risk and preventive interventions in transgender women sex workers. *The Lancet HIV and Sex Workers,* July, 88-100. http://dx.doi.org/10.106/S0140-6736 (14)60833-3.

Prabawanti, C., Dijkstra, A., Riono, P., & Hartono Tb, G. (2014). Preparatory behaviours and condom use during receptive and insertive anal sex among male-to-female transgenders (Waria) in Jakarta, Indonesia. *Journal of the International AIDS Society*, 17, 19343.

Prabawanti C, Bollen L, Palupy R, Morineau G, Girault P, Mustikawati, D.E., Majid, N., Nurhayati, Aditya, E.R., Anartati, A.S., & Magnani, R. (2011). HIV, Sexually transmitted infections, and sexual risk behavior among transgenders in Indonesia. *AIDS and Behavior*, 15, 665-673. DOI: 10.1007/s10461-010-9790-0.

Rekart, M.L. (2005). Sex-work harm reduction. *The Lancet*, 366, 2123-2134. DOI: 10.1016/S0140-6736(05)67732-X.

Rivis, A & Sheeran, P. (2003). Descriptive norms as an additional predictor in the theory of planned behavior: a meta-analysis. *Current Psychology: Developmental, Learning, Personality, Social*, 2(3), 218-233.

Rye, B.J., Fisher, W.A., & Fisher, J.D. (2001). The theory of planned behavior and safer sex behaviors of gay men. *AIDS and Behavior*, 5(4), 307-317. DOI: 10.1023/A:1013130721960.

Sheeran, P., Abraham, C., & Orbell, S. (1999). Psychosocial correlates of heterosexual condom use: a meta-analysis. *Psychological Bulletin*, 125(1), 90-132.

Sheeran, P & Taylor S. (1999). Predicting intentions to use condoms: a meta-analyses and comparison of the theories of reasoned action and planned behavior. *Journal of Applied Social Psychology*, 29(8), 1624-1675.

Sheeran, P & Orbell, S. (1999). Implementation intentions and repeated behaviour: augmenting the predictive validity of the theory of planned behaviour. *European Journal of Social Psychology*, 29, 349-369.

UNAIDS. (2000). *Evaluation of the 100% condom use program in Thailand: Case study*.

Van Empelen, P & Kok, G. (2006). Condom use in steady and casual sexual relationships: planning, preparation and willingness to take risks among adolescents. *Psychology & Health*, 21(2), 165-181. DOI: 10.1080/14768320500229898.

Van Empelen, P & Kok, G. (2008). Action-specific cognitions of planned and preparatory behaviors of condom use among Dutch adolescents. *Archives Sexual Behavior*, 37, 626-640. DOI 10.1007/s10508-007-9286-9.

Tables

Table 1

Demographic characteristics clients of transgender sex workers in Jakarta, 2011

Demographic Characteristics		N	%
Recruited Participants		250	100
Age	<= 19	40	16
	20-24	80	32
	25-29	51	20.4
	30-34	28	11.2
	>=35	51	20.4
Education Level	None	2	0.8
	Primary school	33	13.2
	Junior school	82	32.8
	High school	121	48.4
	Academy/University	12	4.8
Job	Student	12	4.8
	Officer	54	21.6
	Driver/sailor	32	12.8
	Businessman	36	14.4
	Laborer	69	27.6
	Jobless	32	12.8
	Others	15	6
Marital Status	Married	237	94.8
	Divorced/widowed/separated	13	5.2
Duration residence in Jakarta	<= 5 years	65	26
	6-10 years	31	12.4
	11-15 years	16	6.4
	16-20 years	55	22
	21-25 years	37	14.8
	>= 26 years	46	18.4
Live with whom	Alone	60	24
	Wife/regular female partner	27	10.8
	Relatives	133	53.2
	Friends	30	12
Circumcision	Yes	242	97.2
	No	7	2.8

Table 2

First experience of penetrative sex and current sex behavior

Variable		N	%
First experience of penetrative sex			
Age (*N*=250)	<=16	57	22.8
	17-20	131	52.4
	>=21	62	24.8
Type of first sexual behavior (*N*=249)	Anal	33	13.3
	Vaginal	211	84.7
	Both	5	2
Type of sex during first sexual intercourse (*N*=249)	Insertive vaginal sex	211	84.7
	Insertive anal sex	30	12
	Both insertive and receptive anal sex	3	1.2
	Both insertive vaginal and anal sex	5	2
First sex partner by gender (*N*=249)	Male	1	0.4
	Female	217	87.1
	Transgender	31	12.4
First sex partner by status (*N*=249)	Wife	23	9.2
	Girlfriend	148	59.4
	Female sex worker	34	13.7
	Transgender	31	12.4
	Female/male friend	13	5.2
Current sex behavior			
New or regular client of transgender (*N*=230)	>1 time visits	219	87.6
	1st time visit	11	4.4
Number of transgenders as sex partner in the last month (*N*=250)	1	85	34
	2	71	28.4
	3	47	18.8
	≥ 4	47	18.8
Sex behavior during last sex with wife/girlfriend (*N*=207)	Vaginal sex	203	98.1
	Anal sex	3	1.4
	Oral sex	74	35.7
Sex behavior during last sex with FSWs/other women (*N*=142)	Vaginal sex	140	98.6
	Anal sex	3	2.1
	Oral sex	58	40.8
Sex behavior during last commercial sex with transgender	I performed insertive anal sex with transgender	143	57.2
	I was penetrated by transgender	4	1.6
	I received oral sex from transgender	238	95.2
	I performed oral sex with transgender	5	2.0
Always used condom in the last month	During insertive anal sex with transgender (*N*=250)	135	54
	During vaginal sex with wife/girlfriend (*N*=203)	75	36.9
	During vaginal sex with FSWs/other women (*N*=138)	90	65.2

Table 3

Regression analyses of TPB determinants with intentions and actual (past) behaviors

TPB determinants	Intention of using condom during				Condom use during					
	insertive anal sex with TSWs		vaginal sex with women		insertive anal sex with TSWs		vaginal sex with wife/girlfriend		vaginal sex with FSW/other women	
	β	R^2	β	R^2	β	R^2	β	R^2	β	R^2
Attitude	.38***	.39	.22**	.42	.42***	.42	.17*	.36	.19	.34
Subjective norms	. 14*	(*N*=250)	.26***	(*N*=250)	.12	(*N*=143)	.24**	(*N*=203)	.26**	(*N*=140)
PBC	.21**		.27***		.21*		.27**		.22*	

*p< .05, **p< .01, ***p< .001

Table 4

Correlations of TPB determinants with intentions and actual (past) behaviors

TPB determinants	Intention of using condom during		Condom use during		
	insertive anal sex with TSWs	vaginal sex with women	insertive anal sex with TSWs	vaginal sex with wife/girlfriend	vaginal sex with FSW/other women
Attitude	.58** (*N*=250)	.55** (*N*=250)	.62** (*N*=143)	.50** (*N*=203)	.52** (*N*=140)
Subjective norms	.45** (*N*=250)	.56** (*N*=250)	.46** (*N*=143)	.52** (*N*=203)	.52** (*N*=140)
PBC	.48** (*N*=250)	.56** (*N*=250)	.52** (*N*=143)	.53** (*N*=203)	.50** (*N*=140)
Intention	-		.81** (*N*=143	.86** (*N*=203)	.82** (*N*=140)

*p< .05, **p< .01, ***p< .001

Chapter

6

Sexual Identity of Clients of Transgender Sex Workers in Jakarta, Indonesia

Prabawanti C., Buunk A.P., Dijkstra A., Riono P. (2014). Sexual Identity of Clients of Transgender Sex Workers in Jakarta, Indonesia. (Manuscript will be submitted)

Abstract

The study examined the sexual behaviors and components of the sexual identity of 250 clients of transgender sex workers in Jakarta. About half of the clients described themselves as heterosexual, and most others described themselves as bisexual. Oral sex and insertive anal sex were the most prevalent sexual behaviors with transgender sex workers. Overall, the clients felt sexually most attracted to women, fantasized most about having sex with women, and felt much more masculine than feminine. These findings suggest that sex with transgender sex workers is primarily a substitute for sex with women.

Key words: clients of transgender sex workers, sexual identity, sexual behaviors, Jakarta-Indonesia

Chapter 6.

Sexual Identity of Clients of Transgender Sex Workers in Jakarta, Indonesia

Introduction

As in various other Asian countries, the HIV epidemic in Indonesia has a special character because of a large number of male-to-female transgenders (further simply referred to as transgender) that have a very high HIV prevalence as a result of sexual transmission (Ministry of Health Republic of Indonesia/MOH RI, Ministry of Justice and Human Rights Republic of Indonesia, National AIDS Commission/NAC, GFATM, SUM1/USAID, and Worldbank, 2011). Many of them engage in commercial sex with men without protection (Prabawanti et al., 2011; Pisani et al., 2004; Nemoto, Operario, Keatley, & Villegas, 2004; Harcourt & Donovan, 2004; Clements-Nolle, Marx, Guzman, & Katz, 2001; Kellogg, Clements-Nolle, Dilley, Katz, & McFarland, 2001). As a consequence, the clients of transgender sex workers are putting themselves at high risk of contracting HIV as well. Additionally, as the clients of transgender sex workers are heterosexual men who often also have sex with female sex workers (FSW; Pisani et al., 2004), they may play an important role in the spreading of HIV, including to their female partners. That is, they may become a “bridge” for transmitting the virus to lower-risk populations (Lever, Kanouse, Rogers, Carson, & Hertz, 1992; Lau & Tsui, 2003; Subramanian et al., 2008).

Thus far, HIV prevention interventions have paid relatively little attention to this group of men, maybe because little is known about them, including their sexual behaviors and sexual identity. The present study therefore examined the sexual

behaviors and various psychological components of the sexual identity of clients of transgender sex workers (further simply referred to as clients), in Jakarta-Indonesia. The classical theories by Ellis (1936), Krafft-Ebing (1887/1965), and Freud (1922/1959) closely associated sexual attraction towards women with a masculine sex role orientation, and sexual attraction towards men with a feminine sex role orientation. Accordingly, these theories viewed heterosexuality as the normal and appropriate sex role identity and homosexuality as the result of sex role inversion that is having or desiring to have psychological characteristics of the opposite sex, including sexual attraction toward one's own sex (Storms, 1980). However, over the past decades, research has shown that reality is much more complex than these theories suggest, and that various psychological components of sexual identity can be largely independent of each other. i.e., (1*) Biological gender,* the sex one was assigned at birth on the basis of primary sexual characteristics; (2) *Social gender,* experiencing oneself as a man or woman; for instance, a transgender's biological gender is male, but their social gender is usually female; (3) *Sexual orientation*, the direction of one's sexual feelings and behaviors to either the opposite sex (heterosexual), same sex (homosexual), or both (bisexual) (Levay, 1993; Shively & De Cecco,1977; Sell, 1997). For instance, one´s sexual orientation does not necessarily affect one´s attraction to transgender woman. As an illustration of this, a qualitative study in San Fransisco found no consistent patterns between how men described their sexual orientation and their sexual behavior and attraction to transgender women (Operario, Burton, Underhill, & Sevelius, 2008); (4) *Gender roles:* the degree of feeling oneself as masculine or feminine, (cf. Larson, 1981). Gay men tend on average more feminine than heterosexual men (Looy, 2005), but nevertheless, for example homosexual men as well as heterosexual women may experience themselves as quite masculine, even though they are both attracted to men.

Not only there are quite distinct aspects of sexual identity, including sexual orientation, also the sexual orientation itself is a more complex construct than often assumed. Four of the seven dimensions proposed by Klein, Sepekoff, and Wolf (1985) were assessed in the present research, including self-identified sexual orientation (i.e., heterosexual, homosexual, or bisexual); sexual attraction (i.e., feeling sexually attracted to women, to men, or to transgender women); sexual fantasies (i.e., having sexual fantasies about men, women or transgender women), and actual sexual behaviors with transgender women, with women, and with men. A study conducted by Lever (1992) showed that self-identified sexual orientation does not necessarily always match with sexual behaviors. Of 6,982 readers of *Playboy* magazine, approximately two-thirds had bisexual experience (had had sex with both men and women), but they labeled themselves to be heterosexual rather than bisexual. Compared with exclusively heterosexual men, men with bisexual experience had had more sexual partners, had been more often unfaithful to their current partner, reported more anal and oral sexual practices, and reported more often to have had sex with a prostitute in the past five years. They may practice concurrent sexual partnerships.

Objectives

To summarize and expand, this study had in part a descriptive character. We assessed the demographic characteristics and the sexual behavior of the clients. However, the central focus was the sexual identity of the clients. While the biological gender of all respondents was male, in addition to the biological gender, we also assessed the social gender of the clients, i.e., how often they felt their identity was being a man, and how often they felt their identity was being a woman. Next, we focused on the sexual orientation of the clients, including their self-definition as

heterosexual, homosexual or bisexual, their feelings of sexual attraction (i.e., feeling sexually attracted to women, to transgender women, or to men) and their sexual fantasies (i.e., having sexual fantasies about women or transgender women or men). Furthermore, we examined to what extent the clients perceived themselves as masculine and feminine. Masculinity and femininity can be viewed in two ways, that is, as one bipolar dimension (ranging from very masculine to very feminine) or as two independent dimensions, that is, people may for example be quite masculine and at the same time very feminine (Shively & De Cecco, 1977).We assessed masculinity and femininity in the latter way. Men who define themselves as men as well as having sex with transgender women may perceive themselves as more or less feminine, and more or less masculine. Lastly, we examined the extent to which the various components of one´s sexual identity differed among whom identified themselves as heterosexual versus as a homosexual or bisexual.

Methods

Recruitment Procedure

We collaborated with the transgender organization in Jakarta (Yayasan Srikandi Sejati) to get access to the commercial sex sites and to approach the field coordinators ("*mami*") in the five districts. A *mami* usually is a senior transgender woman who provides support for the 5-15 transgender individuals in her group, including violence protection and promotion of condom use, uptake of HIV testing and regular STI checkups (Prabawanti et al., 2011). The transgender organization informed the *mami´s* about this project and asked their permission to conduct the study. The *mami* approached the transgender sex workers and explained the purpose of the study. Next, the interviewers contacted the transgender sex workers and used them as the key contact to reach the clients.

A client was interviewed on side of the river in North Jakarta

The information about the characteristics of clients and estimated times of the commercial transactions were very imperative to approach the clients. Transgender sex workers have commercial transactions during five to six days per week. Within those days, there are peak and off-peak times, as indicated by the number of clients engaged in the commercial sex transaction. Accordingly, to ensure a representative sample of the population, the days selected for conducting the interview were Tuesday or Wednesday during the week, and Friday and Saturday in the weekend. Transgender sex workers are selling sex and meeting their clients in parks, the railway station, and quiet roads, and they prefer to be unidentified as a client of a transgender sex worker. Therefore, the participants were recruited at these locations.

We used the maps from the transgender organization to select the sites where transgender sex workers practice commercial sex. On the basis of this, we recruited participants in the Center of Jakarta (n=46), East Jakarta (n=76), West Jakarta (n=30), South Jakarta (n=42), and North Jakarta (n=60) between June and July 2011. In total, 254 clients of transgender sex workers were approached, of whom 250 met the inclusion criteria. The criteria were the following: male, 18 years old or above, having completed a commercial sexual transaction with a transgender sex workers right before the interview, and voluntarily participating in the study. Four clients were excluded; two clients were under 18 years old, and the other two did not have commercial sexual transactions with a transgender sex workers before the interview session.

Interview Procedure

The study presented in this article was part of a broader study. It was approved by the Ethical Committee Psychology at the University of Groningen, the Netherlands and the Ethical Committee of Psychology at the University of Indonesia. The interviews were

structured and conducted face-to-face, directly after clients completed the commercial sex transaction with a transgender sex worker (exit interview). Interviews were made during the period when commercial sex was taking place, from the late evening until the early morning (between 10 or 11 pm to 4 or 5 am). Interviews of 30 to 45 minutes per client were conducted close to the locations of the commercial sex transactions.

Five extensively trained transgender interviewers were involved in the data collection. We used transgender individuals as interviewers, assuming that clients of transgender sex workers would be more comfortable and open discussing the subject with a transgender woman rather than with a male or female interviewer. The latter might hinder participants from openly expressing themselves, especially regarding their sexual behaviors.

At the beginning of each interview, the interviewers introduced themselves, provided the participants with information about the purpose of the study, and established conditions for confidentiality. They asked the participants whether they understood the information and were willing to participate. Participants gave verbal consent only, to assure anonymity and confidentiality. Once the participants understood the information and agreed to join, the interview was started. Right after the interview, a form that was attached to the interview questionnaire was signed by the interviewer, indicating that the data were gathered with full consent. This consent procedure was approved by the Ethical Committee Psychology at the University of Groningen, the Netherlands and the Ethical Committee of Psychology University of Indonesia. The interview started after the individual had given approval to participate. When the interview was completed, data forms were put into an anonymous sealed envelope.

Questionnaire

Firstly, we assessed *socio-demographic* variables, i.e., age, educational level, marital status and persons currently living with participants. Next, questions about sexual behaviors and sexual identity were included. The items concerning the components of sexual identity were inspired and adapted from the items developed by McConaghy and Armstrong (1983), and Shively and De Cecco (1977).

Sexual behaviors were assessed by asking sexual history and current sex behaviors. The question about sexual history was started by asking the experience of participants with their first penetrative sex, their age when having first penetrative sex, the type of sex (anal, vaginal, or both), the gender of sex partner, and the type of relationship with sex partner. Questions about the current sexual behaviors concerned the type of sexual behavior with transgender women (e.g., anal sex, oral sex) in the last commercial sex, the number of transgender sex partners, and the various sex partners they have currently.

As only males were selected, there was no need to assess biological gender. However, *social gender* had been assessed by asking "What is the strongest feeling about yourself?" (with possible answers: *I feel as a man* or *I feel as a woman*). The next two items were "How often do you feel … a man as your identity" and "….a woman as your identity" using a 5-point scale ranging from *never* (1), *very occasionally* (2), *some of the time* (3), *most of the time* (4), and *all of the time* (5).

With respect to *self-defined sexual orientation,* oone item assessed the clients' main sexual orientation, i.e. "How do you identify yourself?" The optional answers were *I am heterosexual* (1); *bisexual* (2); or *homosexual/gay* (3). Six additional items assessed feelings sexual attraction. The first three items used a scale ranging from 0 to 100. The three items were: "Rate to which degree do you currently feel sexually attracted to

women: *do not feel sexually attracted to women* (0) to *feel sexually very attracted to women* (100)", "Rate to which degree do you currently feel sexually attracted to transgender women: *do not feel sexually attracted to transgender women* (0) to *feel sexually very attracted to transgender women* (100)", and "Rate to which degree do you currently feel sexually attracted to men: *do not feel sexually attracted to men* (0) to *feel sexually very attracted to men* (100)". The last three items used in this measure began with the same stem: "Which of the following best describes your feelings when you are having sex with… a woman? …with a transgender woman? …with a man?" The scales ranged from *not attracted at all* (1), through *somewhat attracted* (3), to *very attracted* (5). Finally, we included one question about sexual fantasy: "When you fantasize about sex, do you fantasize about having sex with: *a man* (1), *a woman* (2), *both a man and a woman* (3), *a transgender woman*(4), *I do not have fantasies about sex* (5)". ,

To assess *gender roles*, i.e., feelings of masculinity and femininity, three items were used. The first two items were "Do you think you have feminine traits?" and "Do you think you have masculine traits?" The answers were on a 5-point scale, ranging from *not at all* (1), *slightly* (2), *moderately* (3), *markedly* (4), and extremely (5). The second two items were introduced by the stem "Which of the following best describe who you are?", with responses for the first item on a 5-point scale, ranging from *I am not masculine at all* (1), (2), *I am somewhat masculine* (3), (4), and *I am very masculine* (5), and responses for the second item on a 5-point scale, ranging from *I am not feminine at all* (1), (2), *I am somewhat feminine* (3), (4), and *I am very feminine* (5).

Data Analyses

The variables of interest were first described in terms of frequency, mean, SD, skewness, kurtosis, and range. In addition, for the aspects of sexual identity, analyses of variance or Chi-squares were conducted to assess differences between heterosexual versus bisexual and homosexual clients.

Results

Descriptive Findings

Socio-demographic characteristics. The average age of the clients was 27.28 years (*SD* = 8.58, *skewness* = 1.11, *kurtosis* = 0.62, *range* = 40). The educational level was relatively high, with over 50% having high school or more. Most of the clients were married, but only about 11% were living with wife or regular female partner. Most lived either with relatives of with friends (see Table 1). The mean of duration of living in Jakarta was 16 years (*SD* =11.02, *skewness* =0.41, *kurtosis* =-0.4, *range* = 47). As Table 1 shows, the professions of the clients varied and included businessmen, drivers and sailors, officers, and laborers, with about 13% being unemployed.

Sexual behaviors. Most of the participants' first penetrative sex were vaginal sex (84.7%), and for 15.2% insertive anal sex or both anal and vaginal sex. In their current sex behaviors, participants reported that they had had sex with four or more transgender women (18.5%), with three transgender women (19.3%), with two transgender women (28%), or with one transgender (34.3%), in the last month. More than 80% of the participants had more than once visited transgender sex workers for having commercial sex transactions. Thus, these men can be considered as more or less regular clients of transgender sex workers. Of the respondents, more than half (57%) did insertive anal sex with transgender sex workers and they seemed very much to favor to

receive oral sex (95%) from transgender sex workers during commercial sex transaction. Furthermore, as we can see in Table 2, nearly all clients had more than one type of sex partners. Only 6% had had exclusively sex with transgender sex workers. The other participants had had sex with regular female partners, female sex workers, or male partners.

Main Findings

Social gender

As Table 2 shows, when asked to choose between feeling like a man or a woman, all clients felt being a man. In addition, however, while virtually nobody ever felt like a woman, about 38% did not always feel like a man. Because, as will be discussed below, very few clients identified themselves as homosexual, for subsequent analyses homosexuals and bisexuals were combined. A repeated measures ANOVA was conducted with as within subjects factor gender identity (i.e., how often the clients felt as a man versus as a woman as their identity) and as between subjects factor sexual orientation (i.e., heterosexual versus bisexual and homosexual). The Mauchly's test indicated that the assumption of sphericity had been met. There was a significant main effect of gender identity, $F(1, 248) = 4218.02$, $p < .001$, a significant effect of the sexual orientation, indicating that more men identified themselves as heterosexual than as homosexual or bisexual, $F(1,248) = 4.47$, $p < .05$, and a significant interaction effect between the two factors, $F(1, 248) = 16.98$, $p < .001$. That is, while overall the participants felt more often as a man ($M = 4.53$, $SD = 0.71$) than as a woman ($M = 1.08$, $SD = 0.45$), this was especially true for the heterosexual participants ($M = 4.69$, $SD = 0.65$), and less so for the bisexual and homosexual participants ($M = 4.36$, $SD = 0.73$). For

feeling as a woman, heterosexual participants, M = 1.02, SD = 0.2, and bisexual and homosexual participants, M = 1.13, SD = 0.61).

Sexual orientation

Self-identified sexual orientation. Of the participants, 52.4% considered themselves as heterosexual, 41.6% considered themselves as bisexual and 6% considered themselves as homosexual (see Table 2). Therefore, for all subsequent analyses, as done above, when analyzing the effect of sexual orientation, homosexuals and bisexuals were combined.

Sexual attraction. We present the descriptive findings on this variable as part of the results of a repeated measures ANOVA that was conducted with as within subjects factor sexual attraction (i.e., sexually attracted to women, transgender women, or men) and as between subjects factor sexual orientation (i.e., heterosexual versus bisexual and homosexual). The Mauchly's test indicated that the assumption of sphericity had been violated for the main effects of the sexual attraction, $X^2(2) = 15.24$, $p = < .001$, therefore Multivariate Tests are reported. There was a significant overall main effect of sexual attraction, $F(2, 247) = 883.72$, $p < .001$; Wilks' Lambda = .12, a significant effect of sexual orientation, $F(1, 248) = 7.27$, $p < .01$, and a significant interaction effect between the two factors, $F(2, 247) = 20.58$, $p < .001$, Wilks' Lambda = .86. That is, overall, all participants felt most sexually attracted to women (M = 89.68, SD = 20.18), and much less sexually attracted to transgender women (M = 49.20, SD = 24.35), and least sexually attracted to men (M = 9.40, SD = 20.65). In addition, as illustrated in Figure 1, heterosexual participants felt more sexually attracted to women than bisexual and homosexual participants (respectively, M = 95.50, SD = 10.83; M = 83.28, SD = 25.52), while bisexual and homosexual participants felt more sexually attracted to

transgender women than heterosexual participants (respectively, *M* = 56.30, *SD* = 23.82; *M* = 42.75, *SD* = 23.07), and more sexually attracted to men (respectively, *M* = 14.62, *SD* = 24.69; *M* = 4.66, *SD* = 14.69).

Sexual fantasies. Regarding their sexual fantasy, 62.4% of the 250 men in this sample fantasized about having sex with women, 22.8% with transgender women, 2.4% with both women and men, 0.8% only with men, and 11.6% did not think about sex. In addition, a chi-square test was conducted to assess the association between sexual orientation (heterosexual and bisexual/homosexual) and sexual fantasies (of having sex with women and transgender women). There was a statistically significant association between sexual orientation and sexual fantasy, $x^2(1) = 8.54$, $p = < .005$ (Figure 2). That is, heterosexual men were more likely to show an interest in sexual fantasies with both a woman and a transgender woman than were bisexual and homosexual men.

Gender roles

Almost all participants (91.6%) said that they did not have feminine traits at all (*M* = 1.12, *SD* = 0.47, *skewness* = 4.82, *kurtosis* = 27.51, *range* = 4). However, the answers varied much more when asked whether they had masculine traits (*M* = 4.22, *SD* = 0.9, *skewness* = -1.05, *kurtosis* = 0.81, *range* = 4): 47.2% described themselves as *extremely*, 32% as *markedly*, 17.2% as *moderately*, and the rest as *slightly* (2.4%) and *not at all* (1.2%) masculine. A repeated measures ANOVA was conducted with as within subjects factor the relational context of masculinity and femininity and as between subjects factor sexual orientation (i.e., heterosexual versus bisexual and homosexual). Since this included only a two level within subjects factor, the Mauchly's test indicated that the assumption of sphericity had been met, therefore Multivariate Tests are reported. There was a significant overall main effect of the relational context of masculinity and

femininity, $F(1, 247) = 1395.72$, $p < .001$, a significant effect of sexual orientation, $F(1, 247) = 8.64$, $p < .005$, and a significant interaction effect between the two factors, $F(1,247) = 18.90$, $p < .001$. Overall the participants felt more masculine ($M = 4.20$, $SD = 0.97$) than feminine ($M = 1.23$, $SD = 0.69$). The effect of relational context implied that, as illustrated in Figure 3, the heterosexual participants felt more masculine ($M = 4.46$, $SD = 0.78$) than bisexual and homosexual participants ($M = 3.92$, $SD = 1.08$). Conversely, the heterosexual participants felt less feminine ($M = 1.16$, $SD = 0.62$) than bisexual and homosexual ones ($M = 1.31$, $SD = 0.76$).

Discussion

The present study provided a number of relevant, and for the Indonesia context, new findings on the characteristics of clients of transgender sex workers. In terms of demographic characteristic, the typical client of transgender sex workers is often a young married man with a relatively high educational level, living separately from his wife as a migrant worker in Jakarta for a long time, with a job usually in the middle-low socioeconomic group.

With respect to their sexual identity, about half of the clients described their sexual orientation as heterosexual, and a large majority of the other clients described their sexual orientation as bisexual. Therefore, these results may explain that overall, the clients were sexually attracted most to women and much less to transgender women and men. However, those who reported to view themselves as bisexual or homosexual felt more sexually attracted to transgender women and men. Nevertheless, it is remarkable that so few clients reported to feel sexually attracted to transgender women, suggesting that visiting transgender sex workers may not be the first choice of most clients, and is not primarily the result of a specific attraction to transgender

women. In line with this, their sexual attraction was manifested primarily by practicing insertive anal sex with transgender women, and only few of them had been inserted by transgender women, the only sexual act that would not be possible with women. Therefore as a whole, these findings suggest that the clients tend to view transgender women primarily as they would women, which is in line with previous research (Operario et al., 2008). Nevertheless, although most clients indicated to be primarily sexually attracted to women, they reported to be a regular customer of the transgender sex workers for getting sexual services, apparently finding something there they could not obtain from women.

Consistent with the findings for self-defined sexual orientation and sexual attraction, around two-third of the clients fantasized about having sex with women and less than one third of the clients fantasized about having sex with transgender women. These findings again underline that a woman is the preferred sexual partner for most clients of transgender sex workers . However, the heterosexual clients showed a higher interest in sexual fantasies with both a woman and a transgender woman than the bisexual/homosexual clients. There is a remarkable contrast between the heterosexual clients and the bisexual or homosexual clients in the interest in sexual fantasies with transgender women: the figures of the heterosexual clients are much higher. These findings seem to suggest those heterosexual clients and bisexual or homosexual clients have different underlying motives for their sexual attraction to transgender women. That is, the heterosexual clients may view and treat transgender as a woman and may view a transgender woman as a substitute during the absence of their steady sexual partner (wife or girlfriend). Most of the clients in this study are married men who do not live with their spouse as they are working as migrant workers in Jakarta for a certain period. In contrast, the bisexual and homosexual clients may view transgender women

more as a man rather than as a woman. Indeed, although the transgender women are dressing up like a woman, physiologically they are still a man. As reported by Operario et al. (2008), one of the gay men who has sex with transgender women explained his identity:

> "I guess I feel more attracted to men many times, even though I'm dating this transgender and she goes with the process but she's still a man, okay? Even though she wants to be a woman. It's just something I feel more connected with. People like that. Basically I have nothing to hide. Okay, I'm 100 percent gay. Okay, even though I may have sex with men and transgenders or females, I consider myself as a gay male."

Although most of the clients practiced vaginal sex at their first penetrative sex, it is as if their current sex behaviors have shifted. They have bought sex from transgender sex workers currently for getting a variety of sexual services. Among the various types of sexual behaviors, receiving oral sex from transgender sex workers was the most favorite one, and the second most favorite was practicing insertive anal sex. Furthermore, the clients may practice concurrent sexual partnerships as the present study shows that only 6% of the clients in this sample had had sexual intercourse with transgender sex workers only. Accordingly, the rest are having at least one sexual partner other than a transgender sex worker. This sexual behavior (concurrent sexual partnerships) is more risky - compared to serial monogamy – for two reasons: first, it exposes more people to the risk of HIV infection in a shorter period of time by linking them together in a sexual network. Infection spreads more rapidly through a network, in comparison to serially monogamous relationships. Second, it increases the likelihood that a sexually active individual will have sex with someone who is newly infected with HIV. Concurrency accelerates the spread of HIV dramatically even when people have only two overlapping

partners. Thus, the clients are putting themselves in a higher risk of acquiring of HIV and their sexual behaviors can be an important factor to amplify the spread of HIV (Morris & Kretzschmar, 1997).

In the present study, the clients clearly felt that they are a man, and not a woman. However, the feeling of being a man was slightly more pronounced among heterosexual clients than among bisexual and homosexual clients. In contrast, the feeling of being a woman was slightly more pronounced among bisexual and homosexual clients than among the heterosexual clients. These results are consistent with the findings on self-perceived masculinity and femininity. As expected in the theory (Shively & DeCecco, 1977), overall, the heterosexual clients felt more masculine than bisexual and homosexual clients.

The present study had several limitations. First, this study was conducted by rolling out a structured face-to-face interview, targeting a specific population who were performing sexual behaviors associated with a risk of negative consequences. Therefore, participants were often unwilling to be identified and may have felt threatened or embarrassed when asked about their sexual identity and sexual behaviors. This could have caused some participants to provide inaccurate answers. In addition, interviews are more vulnerable to a social desirability bias (Dare & Cleland, 1994) especially because transgender sex workers and their clients have been exposed to prevention interventions and participants know what responses are “desired”. Nevertheless, the selection of the interview as a method was considered carefully. A factor that strongly supported the decision to use interviews was that the data were collected in the field at a commercial sex setting with a variety of venues, often in inconvenient settings, and during unusual working hours (very late evening to very early morning), making participants less committed to fill in a questionnaire. Considering this situation, the authors preferred to

provide full guidance involving well-trained interviewers rather than letting participants fill in the questionnaires independently. The study by Dare and Cleland (1994) shows that in the face-to-face interview, the level of item non-response is low.

In summary, this study provides a closer look at the clients of transgender sex workers, a sub-population that has not received sufficient attention in research and in HIVinfection prevention intervention efforts. The present study also offers further insights about the clients' socio-demographic characteristics, the dynamics and diversity of their sexual identity, including more specific sexual risk behaviors that may put them at risk of contracting HIV. Although the clients may as likely be heterosexual as a bisexual or homosexual, there is apparently some diversity within the sexual orientation and the feelings of masculinity and femininity. Therefore, our findings suggest the need to take into consideration the diversity in individual sexual identities, especially when it is related with sexual behaviors. For this purpose, the design of prevention interventions needs to underline that uniqueness.

References

Clements-Nolle K., Marx R., Guzman R., & Katz M. (2001). HIV prevalence, risk behaviors, health care use, and mental health status of transgender persons: Implications for public health intervention. *American Journal of Public Health*, 91, 6, 915-921.

Dare OO, Cleland JG. (1994). Reliability and validity of survey data on sexual behaviour. *Health Transition Review* [Supplement], 4, 93-110.

Harcourt C., & Donovan, B. (2005). The many faces of sex work. *Sexually Transmitted Infections*, 81, 201–206. DOI: 10.1136/sti.2004.012468.

Kellogg, T. A., Clements-Nolle, K., Dilley, J., Katz, M. H., & McFarland, W. (2001). Incidence of human immunodeficiency virus among Male-to-Female transgendered persons in San Francisco. *Journal of Acquired Immune Deficiency Syndromes*, 28, 4, 380-384.

Klein F., Sepekoff , B., & Wolf, T. J. (1985). Sexual orientation: A multi-variable dynamic process. *Journal of Homosexuality*, 11, 1-2, 35-49.

Larson, P. C. (1981). Sexual identity and self-concept. *Journal of Homosexuality*. 7, 1, 15-32.

Lau, J. T. F., & Tsui, H. Y. (2003). Behavioral surveillance surveys of the male clients of female sex workers in Hong Kong: Results of three population-based surveys. *Sexually Transmitted Diseases*, 30, 8, 620-628.

Levay, S. (1993). *The sexual brain*. MIT Press, Cambridge, MA.

Lever, J., Kanouse, D. E., Rogers, W. H., Carson, S., & Hertz, R. (1992). Behavior patterns and sexual identity of bisexual males. *The Journal of Sex Research*, 9, 2, 141-167.

Looy, H. (2005). Gender and sexual identity: A critical exploration of gender inversion theories of sexual orientation. *Journal of Psychology and Christianity*, 24, 4, 317-331.

McConaghy, N., & Armstrong, M. S. (1983). Sexual orientation and consistency of sexual identity. *Archives of Sexual Behavior*, 12, 4, 317-327.

Ministry of Health Republic of Indonesia/MOH RI., Ministry of Justice and Human Rights Republic of Indonesia., National AIDS Commission/NAC., GFATM., SUM1/USAID., and Worldbank. Survei terpadu biologis dan perilaku pada kelompok berisiko tinggi di Indonesia 2011. Lembar Fakta: *Waria* (*Integrated biological and behavioral survey among most at risk population in Indonesia 2011*. Fact sheet: *Waria*.

Morris, M., & Kretzschmar, M. (1997). Concurrent partnerships and the spread of HIV. *AIDS*, 11, 641-648.

Nemoto T., Operario D., Keatley J., & Villegas D. (2004). Social context of HIV risk behaviours among male-to-female transgenders of colour. *AIDS CARE*, 16, 6, 724-735.

Operario, D., Burton, J., Underhill, K., & Sevelius, J. (2008). Men who have sex with transgender women: Challenges to category-based HIV prevention. *AIDS and Behavior*, 12, 18–26. DOI 10.1007/s10461-007-9303-y.

Pisani E., Girault P., Gultom M., Sukartini N., Kumalawati J., Jazan., & Donegan, E. (2004). HIV, syphilis infection, and sexual practices among transgenders, male sex workers, and other men who have sex with men in Jakarta, Indonesia. *Sexually Transmitted Infections*, 80, 536–540. DOI: 10.1136/sti.2003.007500.

Prabawanti C., Bollen L., Palupy R., Morineau G., Girault P., Mustikawati, D. E., Nurholis, M., Nurhayati., Aditya, E. R., Anartati, A. S., & Magnani, R. (2011). HIV,

sexually transmitted infections, and sexual risk behavior among transgenders in Indonesia. *AIDS and Behavior*, 15, 665-673. DOI: 10.1007/s10461-010-9790-0.

Sell, R. L. (1997). Defining and measuring sexual orientation: A review. *Archives of Sexual Behavior*, 26, 6, 643-658.

Shively, M. G., & DeCecco, J. P. (1977). Components of sexual identity. *Journal of Homosexuality*, 3, 1, 41-48.

Storms, M. D. (1980). Theories of sexual orientation. *Journal of Personality and Social Psychology*, 38, 5, 783-792.

Subramanian T., Guptea, M. D., Paranjape, R. S., Brahmam, G. N. V., Ramakrishnan, L., Adhikary, R., Kangusamy, B., Thomas, B. E., Kallam, S., & Girish, C. P. K. (2008). HIV, sexually transmitted infections and sexual behaviour of male clients of female sex workers in Andhra Pradesh, Tamil Nadu and Maharashtra, India: results of a cross-sectional survey. *AIDS*, 22, 5, S69–S79.

Tables

Table 1

Socio-demographic characteristics

	N	%
	250	100
Age		
< 19	40	16
20-24	80	32
25-29	51	20.4
30-34	28	11.2
>=35	51	20.4
Educational Level		
Never	2	0.8
Primary school	33	13.2
Junior school	82	32.8
High school	121	48.4
Academy/University	12	4.8
Job		
Student	12	4.8
Officer	54	21.6
Driver/sailor	32	12.8
Businessman	36	14.4
Laborer	69	27.6
Jobless	32	12.8
Others	15	6
Marital Status		
Married	237	94.8
Divorce/widow/separate	13	5.2
Live with whom in Jakarta		
Alone	60	24
Wife/regular female partner	27	10.8
Relatives	133	53.2
Friends	30	12

Table 2

Gender identity, self-identified sexual orientation, and sexual behaviors

	N	%
Self-identified sexual orientation		
How do you identify yourself?		
Heterosexual	131	52.4
Bisexual	104	41.6
Homosexual/gay	15	6
Gender Identity		
What is the strongest feeling about yourself?		
I feel as a man	250	100
I feel as a woman	0	0
How often do you feel as a man as your identity?		
Never	3	1.2
Very occasionally	1	0.4
Some of the time	10	4
Most of the time	82	32.8
All of the time	154	61.6
How often do you feel as a woman as your identity?		
Never	241	96.4
Very occasionally	3	1.2
Some of the time	4	1.6
Most of the time	0	0
All of the time	2	0.8
Sexual behaviors		
Sex behaviors in the last commercial sex with transgender sex workers		
I did insertive anal sex with transgender sex workers	143	57.2
I had been inserted by transgender sex workers	4	1.6
I received oral sex from transgender sex workers	238	95.2
I gave oral sex to transgender sex workers	5	2.0
Various sex partners of transgenders' clients in Jakarta		
Regular female partners and female sex workers	111	44.4
Regular female partners	86	34.4
Female sex workers	23	9.2
Transgender sex worker only	15	6
Male, regular female partners, and female sex workers	6	2.4
Male and regular female partners	5	2
Male and female sex workers	3	1.2
Male partners	1	0.4

Figures

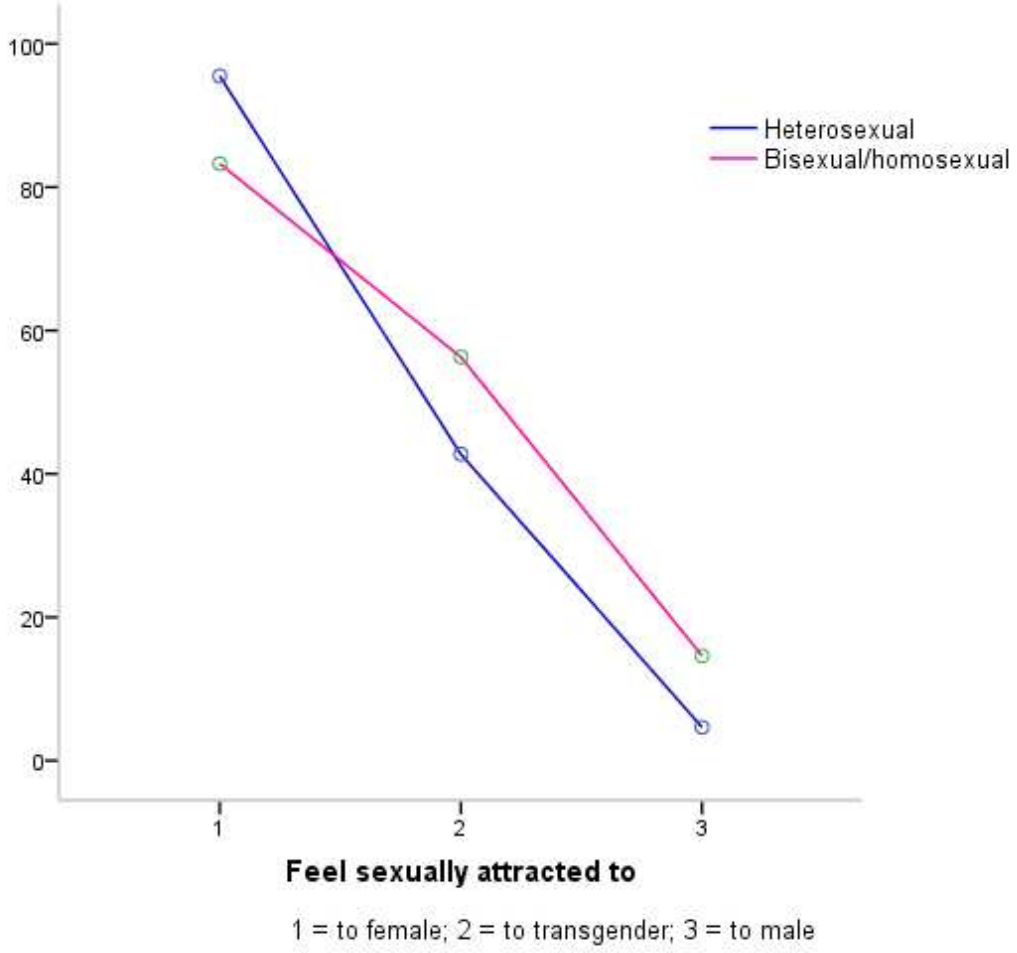

Figure 1. Feelings of sexually attracted to the three different types of gender

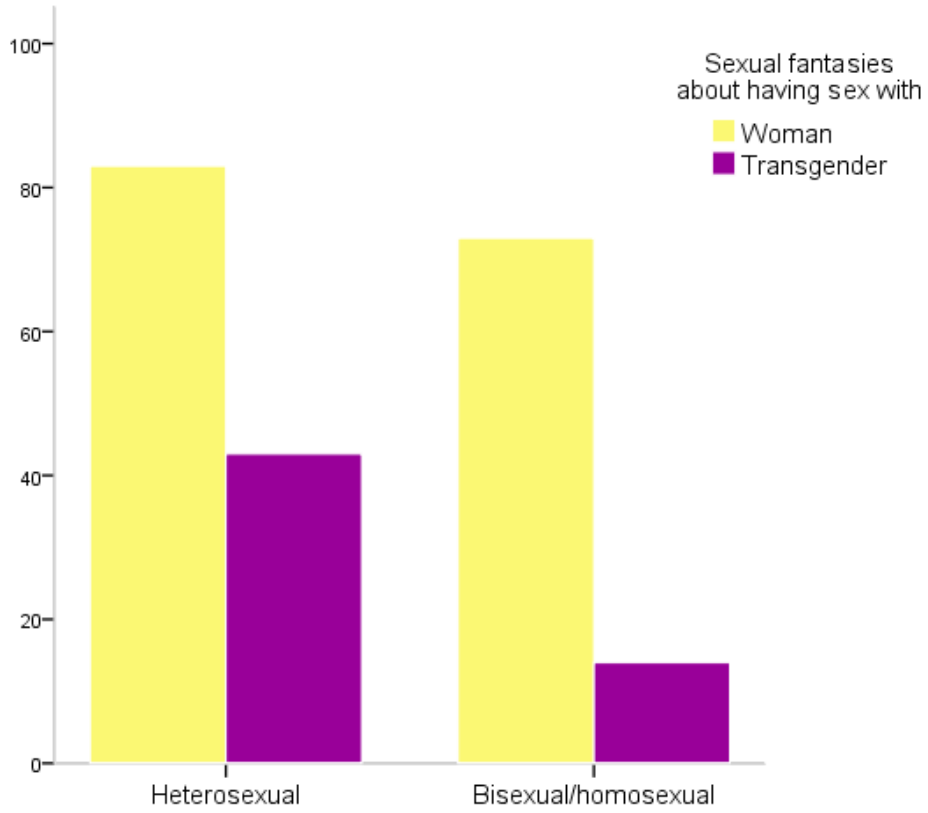

Figure 2. Fantasies about having sex with women and transgender women

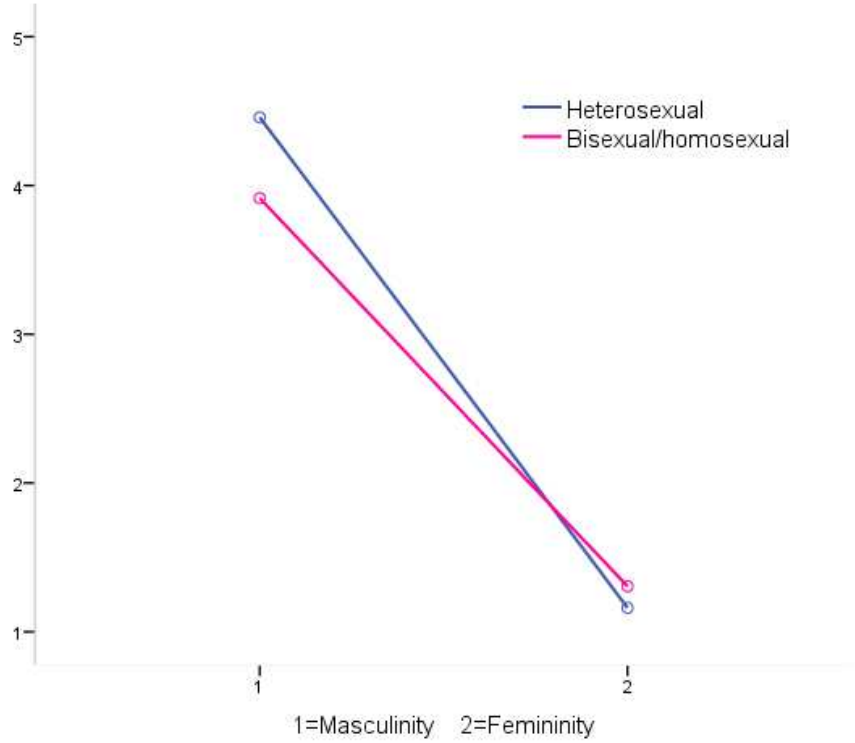

Figure 3. The masculinity and femininity of the heterosexual and bisexual/homosexual men

Chapter

7

Summary and Discussion

Chapter 7.

Summary and Discussion

Introduction

Using the Intervention Mapping (IM) approach as presented in Chapter 1, the present chapter summarizes the results of each study and discusses their contribution to the steps in IM. The chapter ends with a review of the study's limitations, followed by some recommendations for future research.

"Intervention Mapping is a planning approach that is based on the importance of developing theory- and evidence-informed programs, taking an ecological approach to assessing health problems, to intervening in health problems, and to foster community participation in dealing with health problems" (Bartholomew, Parcel, Kok, Gottlieb, & Fernandez, 2011). The IM approach has proven its usefulness as a guideline and tool for the selection of theoretical foundations for health promotion programs, for the application of theory, and for the translation of theory into actual program materials and activities (Kok, Schaalma, Ruiter, Van Empelen, & Brug, 2004). Reference to theory allows one to judge whether all necessary elements of a program are in place. For example, a program designed to encourage condom use could not be expected to succeed unless it addressed the known determinants of that behavior. Also, providing targeted individuals with information about condom use will have little effect without attention to preparatory behaviors such as obtaining condoms and negotiating condom use with one's partner(s). Thus, the use of theory is crucial to ensure that we can describe and address the factors necessary to achieve change. In the context of evaluation, the use of theory functions as protection against a type III error: failure to

attain intervention effectiveness because a program is poorly designed or implemented (Green, 2000). However, as Bartholomew et al. (2011) suggested, in a real-world situation the main focus is on problem solving; thus the IM must be applied from a problem-driven perspective. Good theories help developers to make better choices when planning interventions.

Contribution to the Intervention Mapping Process

As explained earlier, IM describes the process of health promotion program development in six steps, also providing a framework for effective decision making at each step in intervention planning, implementation, and evaluation. However, although the IM approach consists of a series of six steps, the process itself is iterative rather than linear (Bartholomew, Parcel, Kok, Gottlieb, & Fernandez, 2011). Below we explain the contribution of our findings to the Intervention Mapping process.

First of all, Step 1 of IM explains the importance of having a sufficient understanding of the population with the health problem (Bartholomew, Parcel, Kok, Gottlieb, & Fernandez, 2011). Therefore, knowing the socio-demographic characteristics (e.g., age, gender, educational level, socio-economic status, ethnicity, and duration of living in a region) of waria and their clients (further simply referred to as clients), will enable us to profile these target groups and define their shared demographic characteristics (Chapters 2 and 5). In Step 1 we also need to explore the possible causes and/or risk factors affecting the health of the populations under consideration. In the context of the health problem of HIV transmission, HIV infections and AIDS, unprotected sexual intercourse (during anal or vaginal sex) is a central behavioral cause (Chapter 2). In Step 3 of Intervention Mapping this information can be used to design actual interventions: it may guide the choice of both channels and methods of communication

used to expose the target groups to the interventions. Information on condom use and HIV-related health-seeking behaviors is also essential in order to formulate the final performance objectives in Step 2 of Intervention Mapping: the central behaviors that should be changed to reduce the problem.

Secondly, an important focus of this research was to examine the psychological causes behind condom use-related behaviors of waria (Chapter 3) and their clients (Chapter 5), as well as the psychological causes behind their four HIV-related health-seeking behaviors. For this purpose we have used the theory of planned behavior (TPB; Chapter 4). This knowledge is needed primarily in Step 2 of Intervention Mapping: once we have defined the behaviors that need to be changed we need to map their psychological causes; interventions must aim to change these psychological causes in order to change behavior. Thus in Step 3 we must choose those methods with the greatest potential to bring about change (Bartholomew, Parcel, Kok, Gottlieb, & Fernandez, 2011).

Thirdly, in the context of HIV-infection prevention interventions, we focus on the role of clients of sex workers in co-determining the decision to practice safe sex behaviors. However, so far little is known about waria's clients' profiles, sexual preferences and sex behaviors. Men who have sex with transgender individuals are viewed as having an unconventional sexual orientation (Chapter 6). In Intervention Mapping knowledge of their sexual identity and their related sexual needs may first of all be related to their participation in HIV-related behaviors as defined in Step 2. On the other hand, to design interventions in Step 3 it is also important to know how members of the target group perceive themselves. Only then it is possible to communicate to them effectively. Thus, sexual identity information will contribute to our knowledge of the target group and our application of Intervention Mapping.

It is our conclusion that the present studies provide scientifically attained knowledge which can contribute to the systematic development of practical interventions.

TPB Testing on Condom Use-related and HIV-related Health-seeking Behaviors

For this dissertation the theory of planned behavior (TPB) was selected as an explanatory model to examine the determinants of behaviors. The TPB is a parsimonious model (McEachan, Conner, Taylor, & Lawton, 2011) and has been used as a basis, fully or at least in part, for many HIV-infection prevention interventions (e.g., Buunk Bakker, Siero, Van den Eijnden, & Yzer, 1998; Kamb et al., 1998; Bryan, Aiken, & West, 1996; Kamb, Dillon, Fishbein, & Willis, 1996; Basen-Engquist, 1994; Jemmott & Jemmott, 1992). Although TPB does not provide specific methods for behavioral change, the theory does help health educators to understand those variables that need to be changed (Fishbein and Ajzen, 2010).

The TPB postulates three conceptually independent determinants of intention. The first is the attitude toward the behavior itself, whether favorable or unfavorable. The second predictor is subjective norms: the perceived social pressure to perform or not to perform the behavior. The third predictor is the degree of perceived behavioral control (PBC): the extent to which an individual feels he or she has control over performing the behavior. PBC would include the perceived influence of both internal (e.g., self-efficacy, skills) and external (e.g., opportunities, constraints) factors and is assumed to reflect past experience as well as anticipated impediments and obstacles. The TPB predicts that the more favorable a person's attitude and subjective norms with respect to a behavior, and the greater their PBC, the stronger will be their intention to perform the behavior and the greater the probability that the behavior will occur (Ajzen, 1991).

TPB findings

In the present research, the TPB was tested on condom use-related behaviors and HIV-related health-seeking behaviors (Table 1). With regard to waria the five condom use-related behaviors included three preparatory behaviors (getting, carrying and offering a condom), condom use during receptive anal sex and condom use during insertive anal sex. With regard to clients three condom use behaviors were addressed: condom use during insertive anal sex with waria sex workers, condom use during insertive vaginal sex with wife/girlfriend, and condom use during insertive vaginal sex with FSWs/other women. Besides condom use, this thesis also reported the four HIV-related health-seeking behaviors: visiting the STI services regularly, adherence to STI treatment, taking an HIV test, and picking up HIV test results. As in several previous studies of the TPB on protection behaviors of HIV transmission, the TPB variables were found to differ in their predictive power. Summaries of the results of TPB testing on intention and actual (past) behavior of condom use-related and HIV-related health-seeking behaviors are presented below in Tables 1 and 2.

With regard to intention (Table 1), attitude and PBC were consistently significant predictors for seven behaviors: three preparatory behaviors and four condom use behaviors. Subjective norms were a significant predictor for three behaviors. The explained variances in intention ranged from 30% to 57%. Regarding actual (past) behavior, the linear and logistic regressions suggested that PBC was the only direct determinant for the five condom use behaviors and for carrying a condom (Table 2). The explained variances in behaviors ranged from 16% to 42%.

Besides condom use, this thesis also reported the four HIV-related health-seeking behaviors. Our research showed that the TPB variables were related to all four behaviors and PBC emerged as the most important and powerful predictor of all four (Table 2).

The explained variance in behavior (Nagelkerke's *R2*) ranged from 15% to 70% (Chapter 4, Table 1). Our present research thus showed that the TPB was able to explain the variance in each of the four behaviors to a substantial degree. This was the very first time shown in *waria*.

Besides analyzing these direct relations among TPB variables, we also studied mediated relations:

Mediation testing between attitude and behavior. In the present research, the indirect relationships between attitude and behavior, through subjective norms and PBC, were tested on four behaviors. The indirect paths showed that the relationships between attitude and behavior were all significantly mediated by PBC, whereas only one behavior (i.e., adherence to the STI treatment) it was significantly mediated by subjective norms.

Mediation testing between subjective norms and intention and behavior. The indirect relationships of subjective norms, with intention through attitude and PBC, were tested on four behaviors. The indirect paths showed that relationships between subjective norms and intention in all four behaviors were significantly mediated by attitude and PBC. The indirect relationships of subjective norms with behavior through attitude and PBC were tested for six behaviors. The indirect paths showed that the relationships between subjective norms and behavior in all six behaviors were significantly mediated by PBC, whereas only two behaviors were mediated by attitude.

To summarize, the results of this study complement the findings of previous studies that PBC is the strongest predictor of behaviors across a wide variety of activities including condom use and HIV-related health-seeking behaviors. Moreover, although subjective norms and attitudes had no direct relationships with behavior, they are important for understanding health-seeking behaviors and developing interventions.

These TPB data have implications for the development of HIV-infection/AIDS prevention interventions for waria. First of all, this study provides sufficient support for the TPB in explaining condom use and HIV-related health-seeking behaviors. Consistent with the formulation of the TPB, PBC significantly predicted behavior; it was, moreover, the strongest predictor. Secondly, although PBC is the strongest predictor, this study suggests that prevention interventions should focus not only on strengthening the PBC, but also on shaping positive attitudes and subjective norms among the target audiences. These two predictors seem to have contributed to subjects' perceived control over performance of the behaviors.

Sexual Identity of Clients

The present research provided a number of relevant, and for the Indonesian context, new findings on the characteristics of clients of transgender sex workers. In terms of demographic characteristics, the typical client of transgender sex workers is often a young married man with a relatively high educational level, living separated from his wife for extended periods as a migrant worker in Jakarta, and usually with a job in the middle-low socioeconomic group.

With respect to their sexual identity, results suggest that clients were sexually attracted most to women and much less to transgender individuals and men. In line with this, their sexual attraction was manifested by their practice of insertive anal sex, or penetration, with the transgender sex worker. These findings suggest that clients tend to view transgender individuals primarily as women, which is in line with previous research (Operario et al., 2008), despite the fact that waria are physically equipped with a penis. Furthermore, approximately two-thirds of the clients fantasized about having sex with women and less than one third fantasized about having sex with a

transgender person. These findings again underline that a woman is the preferred sexual partner for most clients of transgender sex workers, and that heterosexual clients view a transgender person as a substitute for a woman or their steady partner during their absence from home.

The present study also shows that clients practice concurrent sexual partnerships, as only 6% of the clients in our sample had had sexual intercourse only with transgender persons. The majority of clients studied had at least one sexual partner other than a transgender sex worker. This sexual behavior (concurrent sexual partnerships) is more risky when compared to serial monogamy. Concurrency dramatically accelerates the spread of HIV, even when people have only two overlapping partners. These clients put themselves at a greater risk of acquiring HIV, and their sexual behaviors can be an important factor in further spreading of HIV (Morris & Kretzschmar, 1997).

In summary, this study provides a closer look at the clients of transgender sex workers, a sub-population that has received insufficient attention in research and in HIV-infection prevention intervention efforts. Our study also offers further insights into clients' socio-demographic characteristics and the dynamics and diversity of their sexual identities, including specific sexual behaviors that may put them at risk of contracting HIV. Our findings thus suggest the need to recognize the great diversity in individual sexual identities, especially when related to sexual behaviors. Designers of prevention interventions need to take into account that uniqueness.

Limitations

Our present research had several limitations with regard to study and sampling design, population selection, and the self-reporting of sexual and HIV-related health behaviors (e.g., condom use, HIV-related health-seeking behaviors).

First of all, the study was cross-sectional. We used this design because the targeted populations, especially clients, were not easy to approach and we did not expect to be able to meet the same clients twice to assess their TPB determinants and later to assess their intentions and (future) behavior. We therefore assessed recent (within the last month) condom use behaviors as actual (past) behaviors. Regarding waria the main uncertainty is the composition of the sample with regard to the proportion of those who sell sex. About the clients uncertainty remains as to the composition of the sample regarding age, level of education, and socio-economic status. As Bauer and Scheim reported (2013), low representativeness of the samples is a common methodological weakness in the study of transgender persons, because convenience samples are drawn primarily from urban sites over-representing those who are street-active or present on HIV testing sites. It remains a challenge for researchers in this population to obtain representative samples for measurement purposes (Magnani, Sabin, Saidel, & Heckathorn, 2005). This challenge arises from the fact that waria and many such groups are 'hidden': because such populations are often numerically small and dispersed over large geographical areas, scientific sampling frames or lists do not exist. Moreover, as population members may feel stigmatized because they often engage in either illegal or illicit behaviors, they generally prefer not to participate in data collection activities (Magnani, Sabin, Saidel, & Heckathorn, 2005; Muhib, Lin, Stueve, Miller, Ford, Johnson, & Smith, 2001). Consequently, results from most studies on transgender individuals cannot easily be applied to total populations.

In order to cope with this problem we used Time Location Sampling (TLS), an alternative sampling method by which respondents are recruited at certain types of locations at times when they tend to gather or congregate; they are then within those locations asked about their experiences (Magnani, Sabin, Saidel, & Heckathorn, 2005; Muhib, Lin, Stueve, Miller, Ford, Johnson, & Smith, 2001). As explained in the previous chapters, waria were recruited using a cluster sampling procedure representing all of their residential locations as groups in the five municipalities of Jakarta (Central, North, South, East and West). Clients were recruited for the study at locations where they engaged in commercial sex transactions (e.g., parks, railways stations, and on the road). Aiming to recruit a representative sample of the population we selected Tuesday or Wednesday during the week, and Friday and Saturday during the weekend. Nevertheless, uncertainties remain as to the representativeness of the samples. Future research may further improve the representativeness for clients by applying a more precise time selection, for example by recruiting those clients who engaged in commercial transactions in at least two different time frames (e.g., from 10 pm to 1 am and from 1 am to 5 am). In addition, the duration of data collection may need to be extended, e.g. to twelve weeks instead of six weeks. Moreover, since virtually everyone these days is engaged in social media activities, we may need to consider recruiting waria and their clients by using internet-based methods (Sanchez, Smith, Denson, DiNenno, & Lansky, 2012).

A second limitation of the present research was the use of structured face-to-face interviews to gather the data. This method was chosen with great care to take into account the variance in literacy levels of the participants, which ranged from very low or illiterate to very high. This interview format may, however, have resulted in socially desirable answers or interviewer biases (Dare & Cleland, 1994). In addition, explanations

and different wordings of questions to adjust to the literacy levels of participants may have lowered the standardization of the interview, thereby threatening its internal validity. We tried to minimize these potential drawbacks by providing a structured questionnaire and training the interviewers to standardize their question delivery as much as possible.

Another limitation of our research is that we conducted only *direct measurements* of the determinants of behavior: attitude, subjective norms, and perceived behavioral control (PBC), and not indirect measurements. The latter would include, according to the TPB, basic guides to human behavior such as behavioral beliefs (beliefs about the likely consequences of the behavior), normative beliefs (beliefs about the normative expectations of others) and control beliefs (beliefs about the presence of factors that may facilitate or impede performance of the behavior). In their respective aggregates, behavioral beliefs lead to a favorable or unfavorable attitude toward the behavior; normative beliefs lead to perceived subjective norms; and control beliefs lead to PBC (Ajzen, downloaded from http://people.umass.edu/aizen/pdf/tpb.measurement.pdf, 17 December 2014). The model of behavioral prediction suggests that influencing intentions and behaviors requires changes in relevant salient behavioral, normative, or control beliefs (Fishbein & Ajzen, 2010). Since our present research did not identify these behavioral, normative, and control beliefs, it is not possible to provide information about specific beliefs that would have to be changed to induce a change in intentions and behaviors.

The last limitation to be discussed is the TPB itself. Despite its popularity, the TPB has also been the target of criticism and debate. Ajzen (2011) identified some of the critical issues, the first being the limits to its predictive validity. Even when all TPB constructs are carefully assessed, they contain random measurement errors. Well-

designed measures of attitude towards a behavior of interest, a subjective norm, perceived behavioral control, intention and behavior rarely exhibit reliabilities in excess of 0.75 or 0.80. It follows that, even with good measures, the most we can reasonably expect in term of correlations among the theory's constructs are coefficients of about 0.60. A second critique of the TPB is that it is 'too rational'. It is true that the TPB emphasizes controlled aspects of human information processing and decision making, and behaviors are directed and steered by conscious self-regulatory processes. However, behavioral, normative and control beliefs may be formed on the basis of inaccurate or incomplete information, they may rest on faulty or irrational premises, and they may be biased by feelings of fear, anger and other emotions. Nevertheless these beliefs do determine behavior: attitudes towards the behavior, subjective norms and perception of behavioral control follow automatically and consistently from behavioral, normative and control beliefs. A third criticism of the TPB concerns its lack of attention to affect and emotions. This concern is part of the misperception that the TPB positions the individual as a rational actor who is unaffected by emotions, a conclusion based in part on the standard methodology typically used to operationalize the theory's constructs. However, in the TPB affect and emotions are involved in two ways: (1) they can serve as background factors that influence behavioral, normative and/or control beliefs; (2) affective states can also help to select the behavioral, normative and control beliefs that are readily accessible in memory. Although the TPB is not so much a theory of behavioral change, it is the most useful theory for mapping the determinants of behavior.

To conclude, the results of the research here presented must be interpreted against the background of the above limitations, but also in the context of earlier empirical findings.

Recommendations

The results of the studies can be used to formulate some recommendations for future research and for future interventions. The first suggestion is to optimize the utilization of the IM approach in the process of intervention development. The IM approach has proven to be a useful guideline and tool for the selection of theoretical foundations for health promotion programs, for the application of theory, and for the translation of theory into actual program materials and activities. We would therefore recommend its use in the development of health promotion programs as a framework for effective decision making at each step in intervention planning, implementation, and evaluation. A second suggestion for future research is to assess the behavioral, normative and control beliefs that underlie the direct determinants. This information will provide even more fine-grained input for the IM process. The third suggestion is related to the web of factors at multiple levels (individual, interpersonal, community or societal) which, together, cause health problems. These factors make it important, as suggested in the IM approach, to use an ecological framework for the planning of intervention for a health promotion program (Bartholomew, Parcel, Kok, Gottlieb, & Fernandez, 2011). However, because the focus of the present research is on the individual level, further research of related issues could focus on interpersonal, community and societal levels. For example, the study of condom use must address social-environmental factors that would support condom use at the individual level, such as decriminalization of condom possession. Because in many cases condom possession is considered evidence of a criminal act, individuals at risk may be reluctant to get condoms, carry condoms, and offer condoms to their sexual partners (Wurth, Schleifer, McLemore, Todrys, & Aman, 2013). Studies need to be made of the effects of these policies on condom use. Furthermore, research should address the persistent problems

concerning the (low) level of education and of professional skills of transgender individuals, their social position, and their position on the labor market. These related problems keep them engaged in commercial sex work, hence exposing them continuously to potentially risky sexual situations. On the environmental level research is also needed with regard to adherence to HIV-related health-seeking behaviors. Such studies should focus on the availability, accessibility and affordability of health facilities for transgender people, and on the attitude of health providers towards transgender people as patients. In addition, to complete the IM process for developing an intervention, more comprehensive studies are needed as to preferred media and effective media use, channels, and times to most effectively reach waria and their clients.

To conclude, it has been our intention to provide objective scientific knowledge which will benefit society by helping to diminish the spread of HIV and its health-related problems.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.

Ajzen, I. *Constructing a theory of planned behavior questionnaire*. Retrieved from http://people.umass.edu/aizen/pdf/tpb.measurement.pdf, 17 December 2014.

Ajzen, I. (2011). The theory of planned behavior: Reactions and reflections. *Psychology and Health*, 26, 9, 1113-1127.

Bartholomew, L. K., Parcel, G. S., Kok, G., Gottlieb, N. H., & Fernandez, M. E. (2011). *Planning health promotion programs: An intervention mapping approach* (pp. 18-19). San Fransisco, CA: Jossey-Bass.

Basen-Engquist, K. (1994). Evaluation of a theory-based HIV prevention intervention for college students. *AIDS Education and Prevention*, 6, 5, 412-424.

Bauer, G. R., & Scheim, A. I. (2013). Sampling bias in transgender studies. The Lancet Infectious Diseases, 13, 832.

Bryan, A. D., Aiken, L. S., & West, S. G. (1996). Increasing condom use: evaluation of a theory-based intervention to prevent sexually transmitted diseases in young women. *Health Psychology*, 15, 5, 371-382.

Buunk, B.P., Bakker, A.B., Siero, F.W., Van den Eijnden, R.J.J.M., & Yzer, M.C. (1998). Predictors of AIDS-preventive behavioral intentions among adult heterosexuals at risk for HIV-infection: Extending current models and measures. *AIDS Education and Prevention*, *10*, 149-172.

Dare, O. O., & Cleland, J. G. (1994). Reliability and validity of survey data on sexual behaviour. *Health Transition Review* [Supplement], 4, 93-110.

Fishbein, M, & Ajzen, I. (2010). *Predicting and changing behavior: The reasoned action approach*. New York: Psychology Press, Taylor & Francis Group.

Green, J. (2000). The role of theory in evidence-based health promotion practice. *Health Education Research*, 15, 125-129.

Jemmott, L. S., & Jemmott, J. B. (1992). Increasing condom-use intentions among sexually active black adolescent women. *Nursing Research*, 41, 5, 273-279.

Kamb, M. L., Dillon, B. A., Fishbein, M., & Willis, K. L. (1996). Quality assurance of HIV prevention counseling in a multi-center randomized controlled trial. Project RESPECT Study Group. *Public Health Reports*, 111, Suppl 1, 99-107.

Kamb, M. L., Fishbein, M., Douglas, Jr, J. M., Rhodes, F., Rogers, J., Bolan, G., Zenilman, J., Hoxworth, T., Malotte, C. K., Iatesta, M., Kent, C., Lentz, A., Graziano, S., Byers, R. H., & Peterman, T. A. (1998). Efficacy of risk-reduction counseling to prevent Human Immunodeficiency Virus and Sexually Transmitted Diseases: A randomized controlled trial. *Journal of American Medical Association*, 280, 13, 1161-1167. doi: 10.1001/jama.280.13.1161.

Kok, G., Schaalma, H., Ruiter, R. A. C., Van Empelen, P., & Brug, J. (2004). Intervention mapping: A protocol for applying health psychology theory to prevention programmes. *Journal of Health Psychology*, 9, 1, 85-98.
doi: 10.1177/1359105304038379.

Magnani, R., Sabin, K., Saidel, T., & Heckathorn, D. (2005). Review of sampling hard-to-reach and hidden populations for HIV surveillance. *AIDS*, 19, 2, S67–S72.

McEachan, R. R. C., Conner, M., Taylor, N. J., & Lawton, R. J. (2011). Prospective prediction of health-related behaviours with the Theory of Planned Behaviour: A meta-analysis. *Health Psychology Review*, 5, 2, 97-144.

Morris, M., & Kretzschmar, M. (1997). Concurrent partnerships and the spread of HIV. *AIDS*, 11, 641–648.

Muhib, F. B., Lin, L. S., Stueve, A., Miller, R. L., Ford, W. L., Johnson, W. D., & Smith, P. J. (2001). A venue-based method for sampling hard-to-reach populations. *Public Health Reports*, 1, 116, 216-222.

Operario D., Burton, J., Underhill, K., Sevelius, J. (2008). Men who have sex with transgender women: Challenges to category-based HIV prevention. *AIDS and Behavior*, 12, 1, 18-26.

Sanchez, T., Smith, A., Denson, D., DiNenno, E., & Lansky, A. (2012). Internet-based methods may reach higher-risk men who have sex with men not reached through venue-based sampling. *Open AIDS Journal*, 6, 83–89.
doi: 10.2174/1874613601206010083.

Wurth, M. H., Schleifer, R., McLemore, M., Todrys, K. W., & Amon, J. J. (2013). Condoms as evidence of prostitution in the United States and the criminalization of sex work. *Journal of International AIDS Society*, 16, 18626.
doi: 10.7448/IAS.16.1.18626.

Tables

Table 1

Summary results of direct relations between the TPB variables and intention

Behavior	Variable		
	Attitude	Subjective Norms	PBC
Preparatory behaviors of condom use (waria)			
Getting condoms	***	**	*
Carrying condoms	***	-	***
Offering condoms	***	-	***
Condom use (waria)			
Using condom during receptive anal sex	***	-	***
Using condom during insertive anal sex	**	-	***
Condom use (clients of waria sex workers)			
Using condoms during insertive anal sex with *waria* sex workers	***	*	***
Using condom during vaginal sex with wife/girlfriend/FSWs/other women	**	**	***

*p < .05, **p < .01, ***p < .001; PBC = Perceived Behavioral Control

Table 2. Summary results of direct relations between the TPB variables and behavior

Behavior	Variable		
	Attitude	Subjective Norms	PBC
Preparatory behaviors of condom use (waria)			
Getting condoms	***	**	-
Carrying condoms	*	-	**
Offering condoms	***	***	-
Condom use (waria)			
Using condom during receptive anal sex	-	*	**
Using condom during insertive anal sex	-	-	***
Condom use (clients of waria sex workers)			
Using condoms during insertive anal sex with *waria* sex workers	-	-	**
Using condom during vaginal sex with wife/girlfriend	-	-	**
Using condom during vaginal sex with FSWs/other women	-	-	**
HIV-related health-seeking behaviors (waria)			
Visiting the STI services regularly	-	-	***
Adherence to STI treatment	-	-	**
Taking an HIV test	-	-	**
Picking-up the HIV-test results	-	-	***

*p < .05, **p < .01, ***p < .001; PBC = Perceived Behavioral Control

Summary

Male-to-female transgender people (called waria in Indonesia) are currently getting more attention since UNAIDS (in the Gap Report; 2014) has recognized that they are a population underserved with regard to HIV-infection prevention, treatment and care programs (WHO, UNDP, UNAIDS, Asia Pacific Transgender Network, 2013). In Indonesia, transgender people have the second highest HIV prevalence (21.9%), the first being people who inject drugs (36.4%); waria also have the highest rates for syphilis (25.3%) and the third highest rate for rectal gonorrhea and/or chlamydia (42.8%); Ministry of Health Republic of Indonesia et al, 2011).

To reduce HIV incidence and transmission among transgender people they should have access to all prevention services including education, prevention commodities (e.g., condoms), regular STI screening and treatment, and HIV testing and counseling (WHO, 2013; Prabawanti, 2011; Pisani, 2004). This thesis gathered information to help develop interventions to stimulate transgender individuals and their clients to use such services.

Intervention Mapping (IM) provides guidelines for selecting theoretical foundations for health promotion programs, for applying theory, and for translating theory into actual program materials and activities (Kok, Schaalma, Ruiter, Van Empelen, & Brug, 2004). IM gives a framework for effective decision making at each step in intervention (Bartholomew, Parcel, Kok, Gottlieb, & Fernandez, 2011). To implement the IM process this thesis aims to provide necessary information about waria: socio-demographic characteristics and sexual behaviors of waria and their clients, psychological causes of condom use-related and HIV-related health-seeking behaviors, and the sexual identity of clients.

Step 1 of IM explains the need to apprehend the population with the health problem (Bartholomew, Parcel, Kok, Gottlieb, & Fernandez, 2011). Chapter 2 profiles the target group, waria, according to socio-demographic characteristics (e.g., age, gender, educational level, socio-economic status, ethnicity, and duration of living in a region. Interviews with 209 waria showed them to be of reproductive age, unmarried, living in Jakarta for a longer period, with varying levels of education. Most had their first sexual experience with a man, and most as receptive partner. At present 60% practiced commercial sex, a fact related to more consistent condom use. Present age distribution compared to that of earlier surveys shows relative stability in the composition of the waria population, suggesting that its members must change. Present data on interventions to prevent HIV infection provide a clear picture of the target group and motivation to develop adapt campaigns to reach this population, communicating to them in their language and taking into account their values. In addition, members of the renewed population could be approached and educated about HIV-infection prevention.

Part of this research was to examine the psychological causes behind waria's condom use-related behaviors. In Chapter 3 we tested the effects of psychosocial determinants (as defined by the theory of planned behavior, TPB) on condom use among waria. Structured questionnaires measured three preparatory behaviors (getting, carrying, and offering a condom) and two condom use behaviors (during receptive and insertive anal sex). Attitude was the strongest predictor of intention for all three preparatory behaviors, and PBC was the strongest predictor of intention for actual condom use, both during receptive and insertive anal sex. TPB variables were also significantly related to the second parameter of future behavior, actual (past) behavior: Attitude was predictive in three behaviors, PBC in three behaviors and subjective norms in two behaviors. To conclude, our results have implications for the development of

interventions to target preparatory behaviors and condom use behaviors. Five behaviors and three psychological factors as defined in the TPB are to be targeted.

Chapter 4 focused on health-seeking behaviors: visiting Sexually Transmitted Infections (STI) services regularly, adherence to STI treatment, taking an HIV test, and picking up the result of the HIV test. For all four behaviors, we developed specific measures of psychological determinants as defined by the Theory of Planned Behavior: attitudes, subjective norms, and perceived behavioral control (PBC). The study suggested PBC to be the most powerful predictor, suggesting that interventions should focus on waria's control over the behavior: it should be made easier for them to engage in specific desired behaviors. Interventions should also address waria's attitudes and subjective norms through education, and through a professional and friendly health care system that would provide waria with positive experiences with the desired behavior.

Because clients of transgender sex workers (TSWs) are one party in the decision to use condoms during anal sex they can play an important role as "bridging population" in the spread of HIV. In Chapter 5 we therefore focused on the characteristics of these clients. Also, applying the theory of planned behavior (TPB) we addressed clients' motives for use or non-use of condoms during insertive anal sex with TSWs and vaginal sex with women. We also compared clients' perceptions of anal sex and vaginal sex. Clients were found to be young, married, hetero- or bisexual migrant workers who had been living in Jakarta for a long time. The client population in Jakarta has a fairly homogeneous profile, and the TPB provided helpful insight into their considerations regarding condom use. These findings will be useful when designing preventive interventions specifically for clients of TSWs.

Until now little has been known about waria's clients' sexual identity, sexual preferences and sex behaviors. Men who have sex with transgender individuals are

viewed as unconventional in their sexual orientation. In IM, their sexual identity and their related sexual needs may first of all be indicated by their participation in HIV-related behaviors, as defined in Step 2. However, to design interventions in Step 3 we must also know how members of the target group perceive themselves. In Chapter 6 we examined the sexual behaviors and components of the sexual identity of 250 clients of transgender sex workers in Jakarta. Of the clients almost half described themselves as heterosexual, and most of the rest as bisexual. The most prevalent sexual behaviors with transgender sex workers were receiving oral sex and giving insertive anal sex. Overall, clients felt sexually most attracted to women, fantasized most about having sex with women, and felt much more masculine than feminine. These findings suggest that sex with a transgender person is primarily a substitute for sex with women.

Our research results suggest recommendations for future study. The first suggestion is to optimize use of the IM approach in intervention development, as it has proven a useful guideline for selecting theoretical foundations for health promotion programs. A second suggestion for future research is to assess the behavioral, normative and control beliefs that underlie the direct determinants of behavior. The third suggestion is related to the web of factors (individual, interpersonal, community or societal) which, together, cause health problems. Whereas our present research focuses on the individual level, further research could focus on interpersonal, community and societal levels. Research should also address the persistent problems of the (low) level of education and professional skills of transgender individuals, their social status and their position in the labor market. These related factors keep them engaged in commercial sex work, exposing them continuously to health risks. On the environmental level research is also needed with regard to adherence to HIV-related health-seeking behaviors. Such studies should focus on the availability, accessibility and affordability of health facilities for

transgender people, and on the attitude of health providers towards transgender people as patients. Finally, development of effective interventions in line with the IM approach requires more comprehensive studies as to the most effective media, channels, and times for reaching waria and their clients.

Samenvatting (Summary in Dutch)

De groep man-vrouw transgenders (tegenwoordig *waria* genoemd in Indonesië) krijgt meer aandacht sinds het rapport van UNAIDS van 2014 waarin werd geconstateerd dat zij een groep vormen die weinig aandacht krijgen m.b.t. de preventie, behandeling en zorg van HIV-infecties. Transgenders zijn in Indonesië - in verhouding tot hun aantal - de tweede groep wat betreft de prevalentie van HIV-infecties (21,9 %), de eerste groep wat betreft syfilis (25,3%) en de derde als dragers van gonorroea en/of chlamydia (42,8%).

Alleen als transgenders toegang krijgen tot het volledige aanbod van alle preventieve maatregelen zoals voorlichting, gratis condooms, regulier onderzoek, enz., kunnen bovenstaande cijfers ten goede veranderen. Het onderzoek in dit proefschrift is uitgevoerd in het kader van het ontwikkelen van maatregelen die de individuele transgenders en hun klanten zullen aanmoedigen van genoemde mogelijkheden gebruik te maken.

De Intervention Mapping (IM) methode verschafte ons richtlijnen bij het opstellen van een theoretische fundering voor programma's ter bevordering van de gezondheid en voor de vertaling van de theorie in de uiteindelijke programma's. Deze benadering verschaft ons een raamwerk voor effectieve besluitvorming en evaluatie. Omdat er nog zo weinig informatie over waria's voorhanden is, is het doel van dit proefschrift informatie te verzamelen om daarmee de noodzakelijke stappen te kunnen maken in het IM -proces. Het gaat hier om informatie over de socio-demografische, seksuele en psychologische kenmerken van de waria's en hun cliënten.

De eerste stap van IM verklaart de noodzaak om deze groep met hun gezondheidsproblematiek in kaart te brengen. In Hoofdstuk 2 maken wij in dat kader

een profiel van de doelgroep, de waria's, met gebruik van socio-demografische eigenschappen. Uit de interviews met 209 waria's komen de volgende eigenschappen naar voren: Ze hebben de reproductieve leeftijd bereikt, zijn niet getrouwd, wonen al langere tijd in Jakarta en hebben een zeer verschillend opleidingsniveau. De meeste hadden hun eerste sexuele ervaring met een man, waarbij zij meestal de (anaal) ontvangende partner waren. Zo'n 60 procent hield zich bezig met het aanbieden van commerciële seks; wat samen ging met een meer consistent gebruik van condooms. Een vergelijking van de leeftijd van de onderzochte steekproef met die in vroegere onderzoeken vertoont een redelijke stabiliteit in de wijze waarop de waria's groep is samengesteld, waaruit zou kunnen worden opgemaakt dat de leden steeds veranderen. De huidige gegevens schetsen een helder beeld van de doelgroep en hun motivatie, dat gebruikt kan worden om campagnes aan te passen aan de behoeften van deze groep, rekening houdend met hun taalgebruik en hun waardensysteem. Tevens kunnen de nieuwe leden van deze zich vernieuwende groep benaderd en voorgelicht worden over HIV-preventie.

In Hoofdstuk 3 hebben we de psychosociale oorzaken achter het condoomgebruik van waria's onderzocht. Gestructureerde vragenlijsten maten drie voorbereidende acties (het verkrijgen, het dragen en het aanbieden van een condoom) en twee condoomgebruik gedragingen (tijdens receptieve en tijdens insertieve anale seks). De sterkste voorspeller van de intenties bleek hun attitude te zijn bij alle drie voorbereidende acties, terwijl PBC de sterkste voorspeller van hun intentie was om een condoom te gebruiken tijdens zowel receptieve als insertieve anale seks. De TPB variabelen bleken ook sterke voorspellers te zijn van de tweede parameter van hun toekomstig gedrag; het gedrag in het verleden. De attitude voorspelde drie gedragingen, PBC drie gedragingen en subjectieve norm twee. We kunnen concluderen dat deze

resultaten gevolgen hebben voor de ontwikkeling van interventies gericht op voorbereidend gedrag en condoomgebruik: Interventies dienen zich te richten op vijf vormen van gedrag en de drie psychologische factoren zoals beschreven in de TPB.

Hoofdstuk 4 richt zich op vier hulpzoekgedragingen: Het regelmatig onderzoek laten doen naar Seksueel Overdraagbare Aandoeningen (SOAs), het blijven volgen de SOA- behandeling, het doen van een HIV-test en het ophalen van de resultaten van zo'n test. Wij ontwikkelden speciale metingen van de psychologische determinanten voor elk van de vier gedragingen, op basis van de Theory of Planned Behavior: attitudes, subjectieve norm en waargenomen gedragscontrole (WGC). Het onderzoek suggereert dat WGC de sterkste voorspeller is, en dat interventies zich zouden moeten richten zijn op de controle die waria's ervaren over hun gedrag: Het zou voor hen vooral makkelijker moeten worden gemaakt om de hulpzoekgedragingen uit te kunnen voeren. Interventies zouden ook gericht moeten zijn op het beïnvloeden van de waria's attitudes en subjectieve norm, door educatie en ondersteund door een professioneel en vriendelijk gezondheidssysteem dat waria's voorziet van positieve ervaringen met het gewenste gedrag.

Omdat de cliënten van transgender sekswerkers (TSWs) de andere partij vormen in de beslissing om condooms te gebruiken gedurende anale seks, spelen zij een belangrijke rol als "bridging population" in de verspreiding van HIV. Hoofdstuk 5 is daarom gericht op de eigenschappen van deze cliënten. Bij 250 cliënten van waria's in Jakarta werden gestructureerde interviews afgenomen. Met behulp van TPB onderzochten we de motieven van deze groep om al dan niet condooms te gebruiken gedurende insertieve anale seks met TSWs en vaginale seks met vrouwen. Ook vergeleken we de opvattingen van deze cliënten met betrekking tot anale seks en vaginale seks. Cliënten bleken jonge, getrouwde, hetero- of biseksuele

migrantenarbeiders te zijn die reeds langere tijd in Jakarta woonden. Het bleek om een vrij homogene groep te gaan bij wie de TPB ons een goed inzicht verschafte in hun motivatie voor het gebruik van condooms. Deze gegevens kunnen hun nut bewijzen bij het zoeken naar preventieve interventies gericht op de cliënten van de TSWs.

Tot op heden was weinig bekend over de seksuele identiteit van waria's cliënten, hun seksuele voorkeuren en hun seksueel gedrag. Mannen die regelmatig seks hebben met transgenders worden gezien als onconventioneel in hun seksuele voorkeur. Hun seksuele identiteit en de daarbij horende seksuele noden spreken ook uit hun seksuele gedragingen en de mate waarin ze aan HIV-preventie doen. Deze informatie is ook voor stap 2 van IM van belang. Om echter in staat te zijn interventies te ontwerpen in stap 3 van IM moeten we ook bekend zijn met de manier waarop de leden van deze groep zichzelf zien. In Hoofdstuk 6 onderzoeken wij daarom het seksuele gedrag en verschillende aspecten van de seksuele identiteit van cliënten van TSW’s in Jakarta. Bijna de helft beschreef zichzelf als heteroseksueel en het grootste deel van de rest als biseksueel. De meest voorkomende seksuele handelingen met TSWs waren het ontvangen van orale seks en het geven van insertieve anale seks. In het algemeen voelden de cliënten zich het meest aangetrokken tot vrouwen, fantaseerden ze het meest over seks met vrouwen en voelden zich meer mannelijk dan vrouwelijk. De resultaten suggereren dat seks met een transgender voornamelijk een vervangingsmiddel is voor seks met een vrouw.

Onze onderzoeksresultaten leverden enige suggesties op voor toekomstige onderzoeken. De eerste suggestie betreft het verder optimaliseren van de IM-benadering in de ontwikkeling van interventies, omdat het een goede gids is gebleken bij de selectie van een theoretische basis bij het opstellen van op gezondheid gerichte programma's. Een tweede suggestie voor toekomstig onderzoek betreft het in kaart brengen van de

onderliggende opvattingen aangaande attitudes, subjectieve norm en ervaren gedragscontrole: In het huidige onderzoek zijn alleen directe metingen gedaan. De derde suggestie heeft te maken met het grote aantal andere factoren die samen onze gezondheid in gevaar brengen: Ons onderzoek richtte zich vooral op de individuele aspecten; toekomstig onderzoek zou zich ook moeten richten op het nivo van relaties, gemeenschappen en de maatschappij. De aanhoudende problemen van de transgenders, bijvoorbeeld, met betrekking tot hun (lage) opleiding en professionele vaardigheden dienen hierbij betrokken te worden. De daaruit voortvloeiende sociale status en lage positie op de arbeidsmarkt stimuleren immers de toetreding tot de seksindustrie. Voorts is er meer onderzoek nodig naar hulpzoekgedrag. Daarin kan aandacht worden geschonken aan de beschikbaarheid van gezondheidscentra voor transgenders en aan de houding van de werkers in de gezondheidszorg naar de transgenders in hun rol van patient. Om effectieve interventies in de lijn van IM te ontwikkelen is ook meer onderzoek nodig naar wegen om via allerlei media de waria's en hun cliënten te bereiken.

Acknowledgement

A deep desire to complete the doctoral program is not sufficient to complete the journey. As a practitioner and not an academic, the process required that I learn to bring science and theory together with my observations and understandings from the field. Endless readings and discussions with my supervisor changed viewpoint in a significant way. I suddenly understood how to bring theory and practice together.

Writing the dissertation was not an easy task and unlike any other writing I had previously done. I learned how to connect with the scientific world by submitting several manuscripts for publication to international journals. Writing articles from different points of view and submitting them for review was a humbling process. Experiencing rejection and resubmission made me tenacious in the rigors of research.

Time pressures and managing time were major challenges especially when I was working at FHI 360 while writing the dissertation. I made the decision to leave my work and move to the Netherlands so that I could receive guidance from faculty and focus on my research. Another important challenge was adhering to the planned time frame for completing the dissertation and return to Indonesia. Fortunately faculty was vigilant in reminding me that it was time to return to Indonesia.

I acquired a new set of skills in order to complete data analysis. Fortunately, faculty and fellow students were able to help me learn not only how to interpret the data but also how to examine data from different points of view.

My experience at FHI 360 with the transgender network and civil society organizations opened doors not only to transgender sex workers but also their clients. I gained access to the waria community for my research.

Separation from my family in Indonesia for many months was extremely difficult. I longed for daily routines of life that I shared with my husband, Mas Koko, and also my two daughters, Nadya and Nida. As a temporary solution we decided together as a family to split our household into a bi-national one. So one daughter remained with Mas Koko in Indonesia while the other daughter stayed with me in the Netherlands. Fortunately skype and periodic visits from the family sustained me until the family could be reunited.

I was resolute to finish no matter what lay ahead. Whenever I start a project, I finish it. I soon realized that completing my doctoral studies was not entirely an independent activity. I turned to many faculty, colleagues and friends for support and help. I was blessed to be surrounded by the very best support network and am grateful for the guidance, encouragement, and patience I received from many individuals.

I was fortunate to meet my supervisor (promoter), Prof. dr. Arie Dijkstra, at Leiden University in 2002 as a master degree student. That introduction led me to continue my doctoral studies in 2007. Under his supervision and guidance, my interest in behavior change intervention was transformed into a passion for research in applied behavioral sciences. Professor Dijkstra simplified the dissertation structure and then guided me step by step through the process: building a model, analyzing data, developing a framework, coaching me on how scientific writing, and finally compiling all the pieces into one comprehensive dissertation. During our regular consultancy meetings, I also learned essential values and principles as a researcher. He emphasized that "…(Researchers) should be transparent and honest." Professor Dijkstra also underscored the need to be independent as a researcher. These messages seem so simple and obvious but keeping them in mind throughout the process is not as easy as it seems. I am indebted to him for his kind patience in seeing me through the process.

I would like to express my gratitude to Prof. dr. Abraham P. Buunk, who accepted me as a PhD student and also was my timekeeper for doctoral studies. He created a realistic and manageable schedule for finalizing the dissertation and essentially kept me on track. Special recognition also for his helping me to identify when I needed to briefly interrupt my program to return home to Indonesia before my father's passing.

Dr. Pandu Riono, PhD deserves special mention. From the very beginning he helped me with idea development, selecting method sampling, and supervising the data collection process. From an epidemiologist's perspective he helped me examine the behavior of transgender women and their clients from different points of view. He also sent constant reminders to keep me on track during this project.

I would also like to acknowledge Gagan Hartana, MSc, who generously gave me ample time for discussing and adapting the English questionnaire for the Indonesia context. The discussions were lengthy at times until we were satisfied that accuracy was achieved in meaning and interpretation.

I will always be grateful to Prof. Leo van Der Kamp who was the first person who encouraged me to pursue my dream of continuing my studies at the doctoral level and seeking opportunities that would allow me to do so. We first discussed this at the start of my master program in Leiden University. From that point on, Prof. van Der Kamp was one of my most fervent supporters and "a surrogate parent" to me in the Netherlands; and my highest regards to Prof. Johana Endang Prawitasari, PhD, my teacher in the Faculty of Psychology, Gadjah Mada University who inspired me.

I cannot thank Srikandi Sejati Foundation enough for opening the doors to the waria's social network. Lenny Sugiharto, Ienes Angela, Lulu Surahman, Yola, and Resty were partners in my research and were always ready to answer my questions and enrich my understanding of the waria culture. In addition, as transgender interviewers during

the second data collection, they created a safe, comfortable environment so that discussions with clients of transgender sex workers (TSWs) on sexual behavior were open.

Thanks also to interviewers for the first data collection including Henny Damayanti, Habasiyah, Ibut Lugih Arti, and Hikmat S. Himanda. The team built a strong rapport with and empathy for the waria community. This groundwork enabled the team to be well accepted and effective during interviews.

Special thanks to all mamis: in Jakarta Pusat- Mami Joyce, Mbak Maya, in Jakarta Timur- Mbak Uci, Mbak Minul, in Jakarta Barat- Mak Acung, Mbak Lina (in memoriam), in Jakarta Utara- Mami Orin, Mbak Okky, in Jakarta Selatan- Mami Yuly, Mbak Sandy. They were key contacts for accessing transgender sex workers (TSW) and clients for the research.

My special thanks to several individuals who assisted during data collection and analysis phases. I would like to thank Veli Sungono and Nurhayati who were my partners during data collection with clients of TSWs. Ken Wijayanti who always helps me to manage administrative stuff for this research. Mohammad Noor Farid taught me sampling methods and preliminary analyses. Dimas Budi Wicaksono helped me with data entry. Graphic designers, Arifin Fitrianto and Irwan Ahmett, helped design the thesis book and format the questionnaires. Arif Budiman guided me in applying mediation analyses from Preacher and Hayes in the SPSS. Dede Oetomo shared relevant articles for this study and Adi Nugroho shared his knowledge of MSM (men having sex with men) and transgender women's sexual behavior. Last but not least to Dr. Adriana S. Ginanjar from the Faculty of Psychology, University of Indonesia who guided me on ethical clearance in the Faculty of Psychology, University of Indonesia.

My highest appreciation to Barbara Louisa, Manja Alsema, Gonda Dijkstra, Anita Buitenkamp and Dianne van der Kolk who generously helped me with administration issues. Their assistance was carried through from the time of my arrival to the Netherlands until I finished my dissertation.

Work was my "academic life" and my focus at FHI 360 for thirteen years. I am indebted to my former FHI 360 Country Directors of the Indonesia office for their support and encouragement: Pak Steve (Steve Wignall, Country Director, 2000-2005), Pak Jim (James Johnson, Deputy Director, 2000-2010), Pak Bob (Robert Magnani, Country Director, 2006-2012), and Ibu Asha Basnyat (Country Director, 2012-2013). They gave me the freedom to pursue my doctoral studies while still employed at FHI 360 and their support has never wavered. Thanks also to Philippe Girault and Anton Schneider who cheered me on as well as gave me technical advice.

The Ministry of Health, Republic of Indonesia, Sub-Directorate AIDS, made it possible to complete this study on an under-researched group. Dr. Nadya Wiweko, Drg. Dyah Erti Mustikawati, Dr. Endang Budi Hastuti, Ibu Indrawati, and Ibu Naning Nugraheni were government partners during my tenure at FHI 360. I am also grateful to the National AIDS Commission, Dr. Kemal Siregar and his team, colleagues from the UN agencies, Elis Widen and Margaretha Sitanggang and to Tetty Rahmawati (USAID) and Venicia Mulyono (US ODC) whose support was also appreciated. It is my hope that my research makes a small contribution to understanding the sexual behavior of both waria and their clients.

My colleagues and friends at FHI 360 deserve special mention for their never-ending encouragement: Aan, Kiky, Henri, Mbak Tini, Kekek, Vini, Mas Heri, Mbak Yunita, Mbak Atiek, Mas Nurholis, and Mbak Kemmy from the technical team. Mbak Suli, Mas Hendro,

Dieny, Asther, Mas Ipoel, Mas Totok, Mas Candra, Mbak Meda, Bu Fenny, Mbak Ita and Mbak Hayu from administration and finance department.

Ibu Stephanie Pirolo, thank you for being my best friend during one of the toughest times in my life. I felt supported and comfortable to share my vulnerabilities without fear of being judged. I was unconditionally accepted and cheered me on.

Living as an expatriate outside of my home country, Indonesia, was not always easy. I would like to express my deepest gratitude to my new friends in the Netherlands. To my paranymphs, Yvonne Buunk-Werkhoven and Sarah Elbert, who supported me during finalization of my Ph.D. My love to Yvonne who became my 'older sister' and Suzanne Pietersma who became my best friend when I first arrived at Faculteit GMW's door. Many thanks to Simon Dalley for his patience and help to understand mediation analyses. Thecla Berkel, Wu, and all members of the health group - Sjoukje van Dellen, Adrie Bouma AJ, K. A. Luten, and M. E. Walters - for peer support in scientific study. My deepest love and thanks to my extended family and friends in the Netherlands: Jos, Vonnie & Kyona, Om Jacobs and Tante Milly, Ibu Sin Werkhoven, Guntoro, Cha-Hsuan and her little boy, Yi-San, Mira, Niar, keluarga Mas Yayok and Mbak Lia, Mbak Astri, Mbak Laksmi and her children - Vina and Dita, Nur, Sinta, Mita, Titing, Marije, Mbak Aryanti and the PPIG family (Persatuan Pelajar Indonesia di Groningen).

I cannot thank my family in Indonesia enough for their continued support to my dream of completing the PhD program but also continuing my father's legacy in education during my absence. Ibu (Sri Yani Indrawanti), Mamih (Iin Suny Atmadja), Ibu Halimah; my beloved brothers and sisters: Dewi, Iyan, Mama, Manda, Indra, Ikhwan, Tria, Afit, Tita and Adi; my in-laws - Bapak & Ibu Wintala Suryadjaya; my brothers and sisters-in-law- Krisno and Maria, Astrid and Dody.

Completing a doctoral program and dissertation was not just my decision. This project required the commitment, involvement and full support of the entire family. This dissertation would not have been possible without the enduring love, sincerity, patience and relentless support of Mas Koko, my husband, my daughters, Nadya and Nida. This project took quite some to complete with sacrifices by all. I dedicate this research to them who were always on my side during the most difficult and darkest moments as well during achievements, successes and celebrations. I love you dearly.

And lastly my deepest love and thanks to my father, Bapakku, Djoko Prabowo Saebani, who shaped me, who taught me to never be a quitter, and who always encouraged, supported me and gave me room to grow. I will always remember many nights when he shared his thoughts and values which I later recognized became a part of me. I am comforted in knowing that I shared precious time with him before his passing and was there when he took his final breath. Bapak, may you rest in peace.

Curriculum Vitae

Ciptasari Prabawanti (Ari) was born in Yogyakarta, Indonesia on 3 April 1969. She graduated from senior high school in 1987 at SMA Muhammadiyah I Yogyakarta, Indonesia. She continued and completed her under graduate study at the Faculty of Psychology, Gadjah Mada University, Yogyakarta (1995), and in 2002, completed her master degree in Health Psychology at Leiden University, the Netherlands. In 2007, she decided to pursue her doctoral degree at the Faculty of Behavioral and Social Sciences, Social Psychology Department, Groningen University, the Netherlands under the supervision of Prof. dr. Arie Dijkstra and Prof. dr. Abraham P. Buunk with the title of dissertation: "Towards Effective Interventions for Transgender People and their Clients to Prevent HIV Infection and Transmission: A Study of the Psychological Determinants, Sexual Behaviors, and Socio-demographic Characteristics related to Condom Use and Health Care Use."

Until now, Ari brings 19 years of experience implementing and managing donor-funded HIV/AIDS, reproductive health and family planning programs with and through local NGOs in Indonesia. She started her career spending six years working with teenagers and female sex workers as a counselor and project manager for the Indonesia Planned Parenthood Association (IPPA/PKBI) in Yogyakarta which is affiliated with International Planned Parenthood Federation. Afterwards, she worked at the Population Council, Indonesia Office in Jakarta (1997-1998). After joining FHI 360 (Family Health International) in 1999 to 2013, she spent more than seven years as the Unit Chief/Team Leader for Behavior Change Interventions for the Aksi Stop AIDS (ASA) program and then

in 2010 she was promoted to be Chief of the Prevention Unit. At FHI 360, she provided technical leadership in Behavior Change Interventions and Communications for the prevention of sexual transmission of HIV and support of HIV-related health seeking behavior interventions. She worked in close partnership government and non-governmental organizations (NGOs) providing capacity building and managing collaboration. She is one of the most trusted advisors to the Ministry of Health (MOH) and to other national and international partners on matters related to Behavior Change Intervention/Behavior Change Communication, prevention of sexual transmission among key affected populations including female sex workers, transgender women, men who have sex with men, and other high-risk men, and reproductive health program. Her NGO networks span the archipelago and include women's organizations, HIV/AIDS NGOs and universities.